



U.S. Customs and Border Protection

OFFICE OF TECHNOLOGY INNOVATION AND ACQUISITION (OTIA)

Remote Video Surveillance System Upgrade (RVSSU) Limited User Test (LUT) Final Report

October 13, 2015



Document No: OTIA05-RVSSU-77-150023_Rev A

Developed By:

Office of Technology Innovation and Acquisition (OTIA),
Operational Evaluation Branch (OEB)
1901 South Bell Street
Arlington, VA 22202

Distribution Statement: Distribution authorized to U.S. Customs and Border Protection (CBP) and CBP contractors only for administrative or operational use, authorized April 2009. Other requests for this document shall be referred to the Office of Technology Innovation and Acquisition, 1901 South Bell Street, Arlington, Virginia 22202.

~~For Official Use Only~~

Submitted by:

(b)(6);(b)(7)(C)

10/13/2015
Date

FOUO Operational Test Director
Operational Integration and Analysis Directorate
Office of Technology Innovation and Acquisition

Endorsed by:

(b)(6);(b)(7)(C)

10/8/2015
Date

Deputy Director, Operational Evaluation Branch
Operational Integration and Analysis Directorate
Office of Technology Innovation and Acquisition

Approved by:

(b)(6);(b)(7)(C)

10-9-2015
Date

Director, Operational Evaluation Branch
Operational Integration and Analysis Directorate
Office of Technology Innovation and Acquisition

~~For Official Use Only~~

-ii-

Executive Summary

Purpose

This is the Operational Evaluation Branch Limited User Test (LUT) Evaluation Report of the Remote Video Surveillance System Upgrade (RVSSU). The purpose of this test was to determine the RVSSU operational effectiveness and operational suitability, and its readiness for deployment.

Background

The April 2006 Secure Border Initiative (SBI) Mission Need Statement (MNS) documented a number of capability gaps in United States Border Patrol's (USBP) ability to execute its mission. To address those gaps, the Arizona Border Surveillance Technology Plan identified a number of mature technologies to be deployed in accordance with local operational needs and constraints. It was determined that the user-needs, as specified in the MNS, could best be met, in part, through the purchase and deployment of an upgraded, fully integrated, and commercially available video surveillance system. The result of this planning was the establishment of the RVSSU Program, which provides an enhanced RVSS capability in (b) (7)(E) and Command, Control, Communication, Coordination and Intelligence (C4I).

Scope

The LUT was conducted concurrent with live CBP operations, and incorporated CBP operational data as well as test data collected in controlled condition sets performed in the context of a scripted ORD-based operational scenario. Test vignettes grouped CBP and RVSSU mission tasks, permitting the evaluation of SUT performance in scripted and demonstration test events. Additional observation, examination, and administrative events were conducted in the continuous operational evaluation. A continuous operational evaluation approach was employed to assess the RVSSU. This included not only the LUT event, but observations of all training, vendor and government developmental testing. These observations have previously reported three Letters of Observation for various programmatic events and activities.

~~For Official Use Only~~

Results

COI Resolution

Below are the COI resolutions from the LUT. See section 3 for COI resolution rationale.

RVSSU COI Resolution	
COIs	Limited User Test
E-1: (b) (7)(E)	(b) (7)(E)
E-2: C4I	
S-4: Availability	
Reliability	
Availability	
Maintainability	
Logistics Supportability	
COI- Critical Operational Issue	
SAT- Satisfactory	
UNSAT- Unsatisfactory	
FOV- Field of View	
AOC – Area of Coverage	
C4I – Command, Control, Communication, Coordination and Intelligence	
IoI – Item of Interest	

Effectiveness and Suitability Findings

- The RVSSU is operationally effective against IoIs in the (b) (7)(E) range FOV border protection environment.

(b) (7)(E)

- (b) (7)(E).

(b) (7)(E)

(b) (7)(E).

~~For Official Use Only~~

(b) (7)(E) . Further testing is required due to major limitation to test that the Integrated Contractor Support Plan was not fully implemented.

Operational Deficiencies and Operational Considerations

A total of (b) (7)(E) operational deficiencies and (b) (7)(E) additional operational considerations are identified in this report. The exact details of each along with recommendations for each are provided in Section 4.

~~For Official Use Only~~

-v-

Revision History

Revision	Date	Description of Change
Rev A	2 October 2015	Original Release

~~For Official Use Only~~

TABLE OF CONTENTS

EXECUTIVE SUMMARY	III
PURPOSE.....	III
BACKGROUND	III
SCOPE	III
RESULTS	IV
TABLE OF CONTENTS	VII
LIST OF FIGURES	IX
LIST OF TABLES	IX
1 INTRODUCTION.....	1
1.1 Background	1
1.2 Purpose and Objectives	1
1.3 COIs	2
1.4 System Description	2
1.5 System Concept of Operations.....	5
2 OVERALL APPROACH.....	8
2.1 Event Documentation.....	8
2.2 Event Schedule.....	8
2.3 Event Location	9
2.4 Event Design Overview	9
2.5 Event Organization	9
3 RESULTS	10
3.1 Major Quantitative and Qualitative Test Results.....	10
3.2 Previous COI Assessment.....	13
3.3 Test E-1, (b) (7)(E)	13
3.4 Test E-2, C4I.....	19
3.5 Test S-4, Availability	25
4 RECOMMENDATIONS.....	32
4.1 LUT Deficiency Summary.....	32
4.2 Operational Considerations.....	34
APPENDIX A DETAILED TEST DATA AND RESULTS	35
APPENDIX B EVALUATION METHODOLOGY	67
APPENDIX C TEST OBSERVATION REPORT LOG	74
APPENDIX D SERVICE REQUEST AND MAINTENANCE TICKET LOGS.....	78
APPENDIX E OPERATIONAL REQUIREMENTS MATRIX	95

~~For Official Use Only~~

APPENDIX F	USER SURVEY RESPONSES.....	116
APPENDIX G	RESOURCES	169
APPENDIX H	DISTRIBUTION OF REPORT	170
APPENDIX I	ACRONYMS.....	171
APPENDIX J	REFERENCES	174
APPENDIX K	DETAILED EXECUTION SCHEDULE	175

List of Figures

Figure 1: RVSS Upgrade System Diagram	4
Figure 2: (b) (7)(E) Tower Laydown	5
Figure 3: RVSS System Operational Concept	6
Figure A-1: Distribution of IoI Detection Sources from CBP RVSSU SAR Data	37
Figure A-2: IoI Apprehension, Turn-Back, and Get-Away Percentages	38
Figure A-3: Detection Concentrations for CBP RVSSU SAR Data	39
Figure A-4: Detection Ranges by Tower	40
Figure A-5: Detection Count by Tower and Camera Type	40
Figure A-6: Geolocation Accuracy Error Mode	45
Figure A-7: Critical Failures by Category	60
Figure A-8: Outage Duration by Category	61
Figure A-9: (b) (7)(E)	65
Figure A-1 (b) (7)(E)	65
Figure A-1 (b) (7)(E)	66
Figure B-1: Baseline Deficiency Definition Flow Diagram	71

List of Tables

Table 1: System Under Test Configuration	3
Table 2: Event Schedule	9
Table 3: LUT Team Organization	9
Table 4: Major Quantitative Test Results	10
Table 5: Major Qualitative Test Results	12
Table 6: COI E-1, (b) (7)(E) Deficiency Summary	14
Table 7: COI E-2, C4I Deficiency Summary	19
Table 8: COI S-4, Availability Deficiency Summary	26
Table 9: RVSSU LUT Deficiency Summary	32
Table A-1: (b) (7)(E)	35
Table A-2: (b) (7)(E)	36
Table A-3: (b) (7)(E)	39
Table A-4: Analytics Detect Summary	41
Table A-5: (b) (7)(E)	42
Table A-6: (b) (7)(E)	43
Table A-7: (b) (7)(E)	46
Table A-8: SRHD Vignette data for (b) (7)(E)	47
Table A-9: SRHD Classification of Special Characteristics	47
Table A-10: All Vignette Data for Measures 9, 10, 11, and 13	48
Table A-11: Vignette Data for Measure 12	50

For Official Use Only

Table A-12: Reliability Results Summary	53
Table A-13: SUT Critical Failure Log.....	53
Table A-14: Government Critical Failure Log	59
Table A-14: LUT RAM Data Summary	62
Table A-15: RVSSU Operational Availability (Ao).....	63
Table A-16: Communications Subsystem Availability	63
Table A-17: Maintainability Results Summary	64
Table B-1: Baseline Deficiency Definitions	70
Table C-1: Test Observation Report Log.....	74
Table D-1: CBP TSR Log for LUT	78
Table D-2: ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)	81
Table D-3: ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)	92
Table E-1: Operational Requirements Traceability Matrix	95
Table E-2: Operational Requirements Summary	110

~~For Official Use Only~~

PAGE INTENTIONALLY LEFT BLANKE

~~For Official Use Only~~

1 INTRODUCTION

1.1 Background

The April 2006 Secure Border Initiative (SBI) Mission Need Statement (MNS) documented a number of capability gaps in United States Border Patrol's (USBP) ability to execute its mission. To address those gaps, the Arizona Border Surveillance Technology Plan identified a number of mature technologies to be deployed in accordance with local operational needs and constraints.

It was determined that the user-needs, as specified in the MNS, could best be met, in part, through the purchase and deployment of an upgraded, fully integrated, and commercially available video surveillance system. The result of this planning was the establishment of the RVSSU Program, which provides an enhanced RVSS capability in (b) (7)(E) and Command, Control, Communication, Coordination and Intelligence (C4I) to fill critical gaps in:

• (b) (7)(E)
• (b) (7)(E)
• (b) (7)(E)

The legacy RVSS did not undergo previous Operational Test (OT). This is the first report of OT for the RVSS Upgrade. Operational Evaluation Branch (OEB) employed a continuous operational evaluation approach in support of the Limited User Test (LUT). Three Letters of Observation (LOO) documented OEB observations and findings following the Contractor Test, the Government System Acceptance Test (SAT), and the SAT Regression Test. These LOOs were provided to the RVSSU Program Manager and the Office of Border Patrol (OBP) in support of the Government decision whether or not to authorize further deployment of the RVSSU to additional Areas of Responsibility (AOR) along the Arizona Border.

1.2 Purpose and Objectives

The purpose of the RVSSU (b) (7)(E) LUT was to resolve Critical Operational Issues (COIs) by executing a limited operational effectiveness and suitability evaluation of the RVSS Upgrade System in the (b) (7)(E) AOR with trained and qualified U.S. Border Patrol Agents (BPA) operating the system with Contractor Maintenance Logistic Support (CMLS).

The LUT evaluated system performance, capabilities and COIs as described in the RVSSU:

- Draft Integrated Evaluation Framework, Document No. OTIA05-RVSSU-71-140024, which was developed in a Beta test process that incorporated Mission Based Test Design
- Operational Requirements Document (ORD), Document No. OTIA05-RVSS-00-000001
- Test and Evaluation Master Plan (TEMP), Document No. OTIA02-RVSSU-14-000001_RevC

LUT results informed Component Acquisition Executive programmatic decisions, characterized system capabilities, limitations and deficiencies, and further developed RVSSU Concept of Operations, Operational Considerations and Tactics, Techniques, and Procedures.

~~For Official Use Only~~

The Test Objectives (TO) of this event, as documented at Test Event Gate Review (TEGR) 0/1, were as follows:

- Validate the system provides (b) (7)(E) of Items of Interest (IoI) within the Arizona Border, (b) (7)(E) RVSSU Area of Coverage (AOC)
- Validate the system assists USBP personnel with command, control, communications, computer and intelligence (C4I) decisions regarding resolution of IoIs within the Arizona Border, (b) (7)(E) RVSSU AOC
- Assess system Reliability, Availability, Maintainability and Supportability

1.3 COIs

The LUT evaluated the following Effectiveness COIs:

- E-1 (b) (7)(E) – Is the RVSSU operationally effective at providing (b) (7)(E) IoIs within the Arizona Border (b) (7)(E) RVSS-U AOC?
- E-2 Command, Control, Communications, Computer, and Intelligence (C4I) – Is the RVSSU operationally effective at assisting Border Patrol personnel with C4I decisions regarding the resolution of IoIs within the Arizona Border (b) (7)(E) RVSSU AOC allowing them to complete the RVSSU mission?

The LUT evaluated the following Suitability COI:

- S-4 Availability – Will the Availability of the RVSSU system support completion of its mission?

1.4 System Description

The RVSSU, System Under Test (SUT), consists of 3 major subsystems:

- **RVSSU Unit Sensor Suites**

(b) (7)(E)

- **Backhaul Communications Subsystem**

(b) (7)(E)

- **C2F, Video Management System (VMS)**

(b) (7)(E)

(b) (7)(E)

An operator training facility and instructor and student training guides complete the SUT.

Government Furnished Equipment (GFE) includes various power supplies, (b) (7)(E)

(b) (7)(E) towers and structures and physical security measures.

Table 1 details the RVSSU Unit and Sensor Suite configuration for the (b) (7)(E) LUT. Figure 1 depicts the three subsystems. Figure 2 illustrates the (b) (7)(E) RVSSU tower laydown.

Table 1: System Under Test Configuration

Tower Site No.	(b) (7)(E)
(b) (7)(E)	(b) (7)(E)

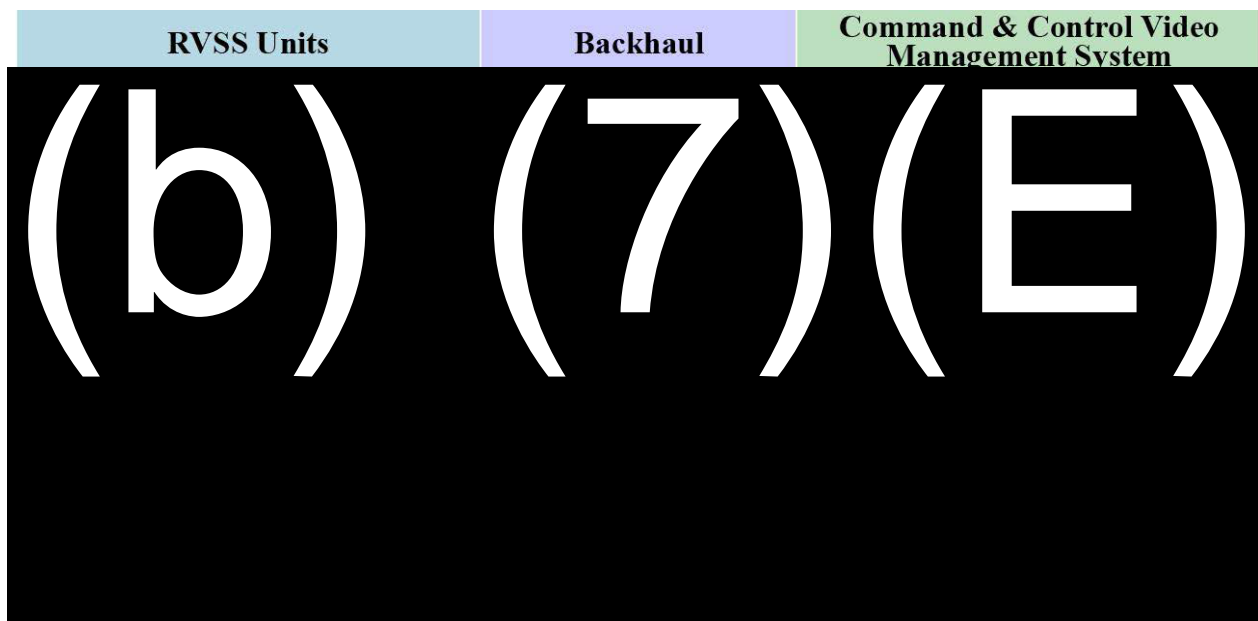
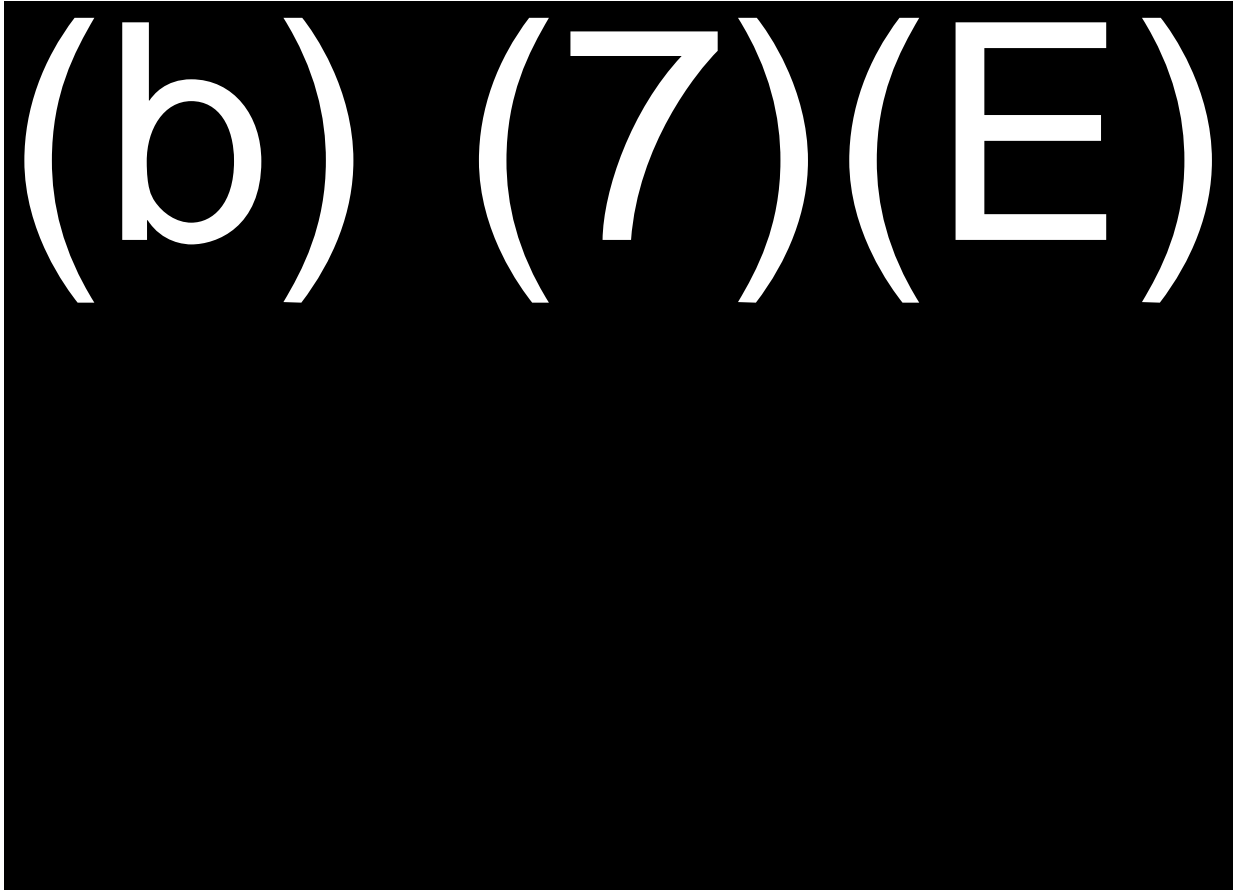


Figure 1: RVSS Upgrade System Diagram

~~For Official Use Only~~~~For Official Use Only~~

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar

Figure 2: (b) (7)(E) *Tower Laydown*

1.5 System Concept of Operations

An operational view of the RVSSU is depicted in Figure 3. The system consists of a number of Remote Video Surveillance towers, (RVSSU Units), situated along the border, (b) (7)(E)

(b) (7)(E)

~~For Official Use Only~~

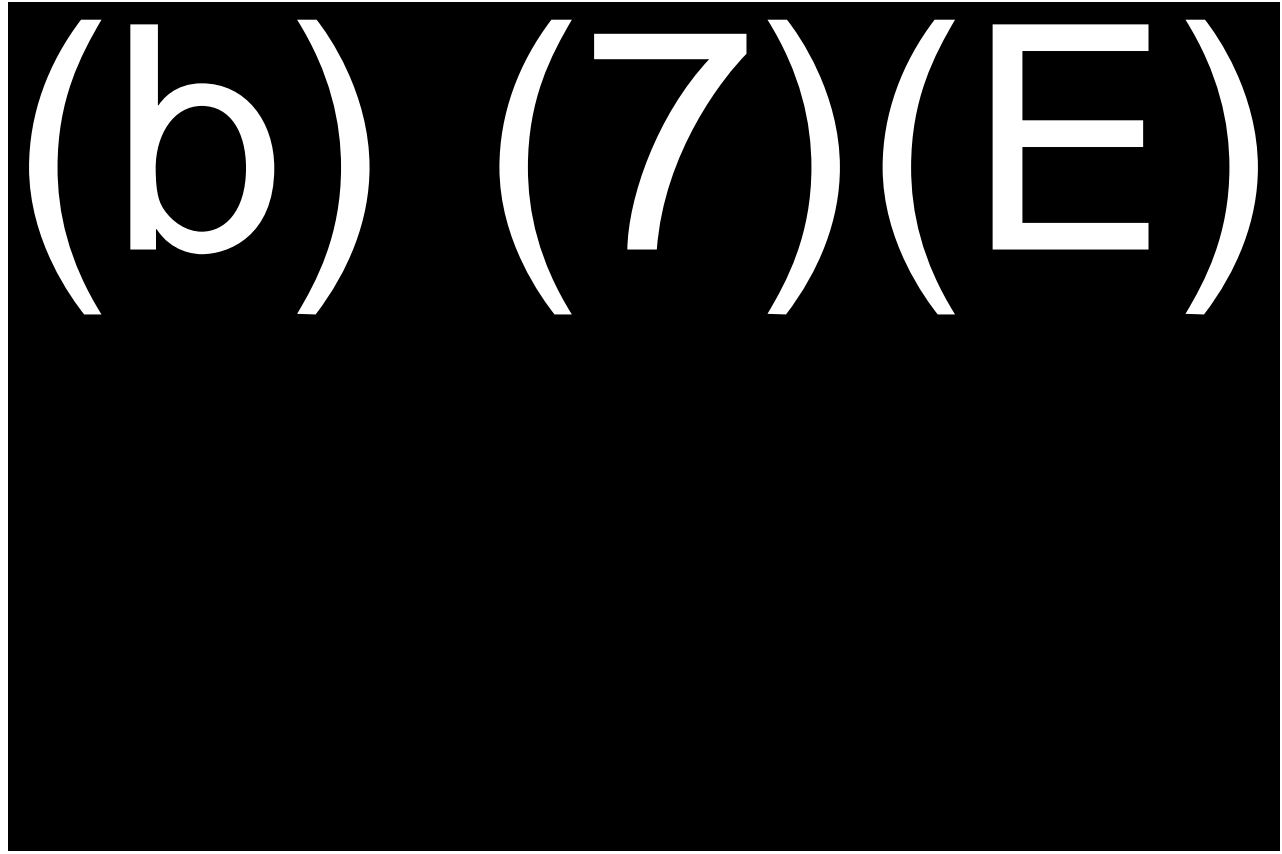


Figure 3: RVSS System Operational Concept

The RVSSU will contribute to Securing America's Borders by deterring illegal border crossings of persons and goods. The RVSSU will enable CBP to: (b) (7)(E)

VSSU will support accomplishment of the following CBP functions and tasks:

- (b) (7) (E)
-
-
-
-
-
-
-
-
-
-

• (b) (7)(E)

The SUT will provide actionable information to the BPA operator who communicates to BPA in the field using (b) (7)(E). This information includes near real time data on border incursion event detection, IoI track, location, identification and classification, and post event data for CBP analysis in support of prediction and deterrence effects.

The Command and Control Facility (C2F) RVSSU operator will receive actionable information (b) (7)(E), from legacy systems and from data sources such as:

• (b) (7)(E)

Systems that are required to execute the missions which the RVSSU is supporting include the (b) (7)(E) System and BPA teams in the field.

2 OVERALL APPROACH

2.1 Event Documentation

Event documentation consisted of test planning documents (Test Plan, Test Event Gate Review Briefings, and Test Readiness Review Briefings), test execution documents (Data Management and Analysis Plan), and test reporting documents (Daily Status Reports, Quick Look Briefings, and Final Report). These documents are summarized as follows:

Test Planning Documents

- **OEB Test Plan**, *OTIA-RVSSU-72-150005*. This document provided the details of how the OEB / Independent Test Organization (ITO) test team planned to execute the test, record the data and observations, and the schedule of events.
- **OEB Test Event Gate Review Briefings**. These briefings presented the test objectives, design, schedule, and funding to RVSSU Stakeholders to gain the buy-in and approval to proceed to the next step of test planning.
- **Operational Test Readiness Review Briefings**. These briefings presented the readiness status of DT, the SUT, Test Documentation, Resources, and Contractor, Government and USBP personnel to Stakeholders to gain the buy-in and approval to proceed to commencement of independent OT.

Test Execution Documents

- **Data Management and Analysis Plan**, *OTIA-RVSSU-72-150006*. Described the test data that was collected; explained the evaluation method used; outlined the standards and processes for data collection, storage, archiving, and security; identified data management personnel and resources; and provided guidelines for validating data quality and performance of data analysis.

Test Reporting Documents

- **Daily Status Reports**. These documents summarized the day's activities, tests executed, Operational Test Observation Reports (TOR) generated, and plans for the next day of testing.
- **LUT Final Report**, *OTIA05-RVSSU-77-150023*. This document provides the detailed results of the test to include: COI Resolution and Rationale, Major Quantitative and Qualitative Results, SUT Deficiencies, Operational Considerations, RAM Data, User Feedback, and the Director, OEB, Effectiveness and Suitability Conclusions and Recommendations.

2.2 Event Schedule

Table lists the LUT Event Schedule. The Detailed Execution Schedule is located in Appendix K.

Table 2: Event Schedule

Activity	Start Date	End Date
Dry Runs	8/3/2015	8/5/2015
Test Readiness Review	8/6/2015	8/6/2015
Runs For Record	8/7/2015	8/14/2015
Final Report	10/2/2015	10/2/2015

2.3 Event Location

This event was conducted at the (b) (7)(E) Station C2F and pre-designated locations within the (b) (7)(E) AOC where planned targets were positioned.

2.4 Event Design Overview

The LUT was conducted concurrent with live CBP operations, and incorporated CBP operational data as well as test data collected in controlled condition sets performed in the context of a scripted ORD-based operational scenario. Test vignettes grouped CBP and RVSSU mission tasks, permitting the evaluation of SUT performance in scripted and demonstration test events. Additional observational, examination, and administrative events were conducted in the continuous operational evaluation.

2.5 Event Organization

Test team roles were executed per the LUT Plan. Table lists personnel that supported execution of the LUT.

The test was supported by (b) (7)(E) USBP Agents who participated in LUT, (b) (7)(E) RVSSU Trained Operators and (b) (7)(E) Talkers, Drivers, and Supervisors.

Table 3: LUT Team Organization

Position	Personnel	Organization
Operational Test Director	(b)(6);(b)(7)(C)	OTIA/OEB
Operational Test Manager / ORSA	(b)(6);(b)(7)(C)	OTIA/OEB
Test Lead / Data Collector / Analyst	(b)(6);(b)(7)(C)	ITO/OEB
Test Execution Analyst / Data Collector	(b)(6);(b)(7)(C)	ITO/OEB
Data Manager / Data Collector / Analyst	(b)(6);(b)(7)(C)	ITO/OEB
2 Field Test Coordinators	USBP	USBP
Data Collector	(b)(6);(b)(7)(C)	OTIA
Data Collector	(b)(6);(b)(7)(C)	OTIA

3 RESULTS

All effectiveness and suitability tests were accomplished using the procedures and data analysis described in reference (3). For deviations, see Appendix B.2.

3.1 Major Quantitative and Qualitative Test Results

Table 4 contains the major quantitative test results from LUT.

Table 4: Major Quantitative Test Results

Measure	Parameter	Test Period	Result	Threshold
Effectiveness				
Probability of Detection (Pd) (DT Data)	(b) (7)(E)	(b) (7)(E)	(b) (7)(E)	(b) (7)(E)

Measure	Parameter	Test Period	Result	Threshold
(b) (7)(E)				
Suitability				
Reliability	(b) (7)(E)			
Maintainability	(b) (7)(E)			
Availability	(b) (7)(E)			
(b) (7)(E)				

MTBCF- Mean Time Between Critical Failure

HW- Hardware

Measure	Parameter	Test Period	Result	Threshold
SW- Software MTTR- Mean Time To Repair Ao- Operational Availability ICSP- Integrated Contractor Support Plan CMLS- Contractor Maintenance Logistic Support				

Table 5 contains the major qualitative test results from LUT.

Table 5: Major Qualitative Test Results

Measure	Parameter	Result	Threshold
M18	(b) (7)(E)		Y/N
M25			Y/N
M32			Y/N
M45			Y/N
M50			Y/N
M54			Y/N
M55			Y/N
M56			Y/N

~~For Official Use Only~~

Measure	Parameter	Result	Threshold
M57 / M58	(b) (7)(E)		
FOR- Field of Regard			

3.2 Previous COI Assessment

The RVSSU did not undergo previous OT, therefore there is no previous COI assessment. OEB employed a continuous operational evaluation approach, and previously reported three Letters of Observation for various programmatic events and activities. The events and dates in which OEB participated included:

- Operator Training provided by the Contractor, July 7 – 11, 2014 and January 12 – 16, 2015
- Contractor Test (b) (7)(E) Tower Test) Runs for Record (RFR), conducted by the Contractor, July 18 – August 2, 2014
- “48-Hour Hands-On” event, where USBP operated the RVSSU, August 3 – 4, 2014
- CMLS, ongoing from August 19, 2014 to present
- Contractor Test (SRHD Test) RFR, conducted by the Contractor, October 23 – 25, 2014
- Beneficial Use period, where USBP operated the RVSSU in a specific event August 5 – 19, 2014 and continuing to present
- Periodic, in-stride exploratory data analysis of SAR submissions to support Beneficial Use, the System Acceptance Test, and the LUT
- System Acceptance Test (SAT) in (b) (7)(E) AOR, January 6 – 29, 2015
- SAT Regression Test in (b) (7)(E) AOR, May 11 – 18, 2015

3.3 Test E-1, (b) (7)(E)

Is the RVSSU operationally effective at providing (b) (7)(E) of IoIs within the Arizona Border (b) (7)(E) VSS-U AOC?

Results (SAT)

The capability of the RVSSU to provide (b) (7)(E) of IoIs within the Arizona Border, (b) (7)(E) RVSSU AOC was evaluated during LUT from August 3 - 14, 2015 at the (b) (7)(E) AZ Border Patrol Station. CBP historical RVSSU data from December 2014 through February 2015 was also analyzed. (b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

3.3.1 SUT Deficiencies

(b) (7)(E) deficiencies identified during LUT are summarized in Table 6. Individual deficiency descriptions follow in the order listed. A deficiency summary table is provided in section 4, Table 9. Baseline deficiency definitions are described in Table B-1, and the evaluative process flow is depicted in Figure B-1 of Appendix B.

Table 6: COI E-1, (b) (7)(E) Deficiency Summary

No.	Title	COI	Level
5	(b) (7)(E)		
6			
11			
12			

SUT Deficiency No. 5

1. SYSTEM UNDER TEST DEFICIENCY. (b) (7)(E)

(b) (7)(E)

2. TEST CONDITIONS, RESULTS, AND ANALYSIS. The RVSSU was evaluated in the (b) (7)(E), AZ Border Patrol Station during the Limited User Test conducted from 3-14 August 2015. (b) (7)(E)

3. MISSION RELATION. (b) (7)(E)

4. CONCLUSION. (b) (7)(E)

5. RECOMMENDATION. Correct as soon as possible.

SUT Deficiency No. 6

1. SYSTEM UNDER TEST DEFICIENCY.

(b) (7)(E)

(b) (7)(E)

2. TEST CONDITIONS, RESULTS, AND ANALYSIS. The RVSSU was evaluated in the (b) (7)(E) AZ Border Patrol Station during the Limited User Test conducted from 3-14 August 2015.

(b) (7)(E)

3. MISSION RELATION.

(b) (7)(E)

4. CONCLUSION.

(b) (7)(E)

5. RECOMMENDATION. Correct as soon as practicable.

SUT Deficiency No. 11**1. SYSTEM UNDER TEST DEFICIENCY.** (b) (7)(E)

(b) (7)(E)

2. TEST CONDITIONS, RESULTS, AND ANALYSIS. The RVSSU was evaluated in the (b) (7)(E) AZ Border Patrol Station during the Limited User Test conducted from 3-14 August 2015. (b) (7)(E)

(b) (7)(E)

(b)(6);(b)(7)(C)

(b) (7)(E)

3. MISSION RELATION. (b) (7)(E)**4. CONCLUSION.** (b) (7)(E)**5. RECOMMENDATION.** Correct as soon as practicable.

SUT Deficiency No. 12**1. SYSTEM UNDER TEST DEFICIENCY.**

(b) (7)(E)

(b) (7)(E)

2. TEST CONDITIONS, RESULTS, AND ANALYSIS. The RVSSU was evaluated in the (b) (7)(E) AZ Border Patrol Station during the Limited User Test conducted from 3-14 August 2015.

(b) (7)(E)

(b) (7)(E)

3. MISSION RELATION.

(b) (7)(E)

4. CONCLUSION.

(b) (7)(E)

5. RECOMMENDATION. Correct as soon as practicable.**3.3.2 Other Deficiencies Impacting this COI**

- SUT Deficiency No. 1
- SUT Deficiency No. 2
- SUT Deficiency No. 3
- SUT Deficiency No. 4
- SUT Deficiency No. 7
- SUT Deficiency No. 9
- SUT Deficiency No. 13

3.4 Test E-2, C4I

Is the RVSSU operationally effective at assisting Border Patrol personnel with C4I decisions regarding the resolution of IoIs within the Arizona Border (b) (7)(E) RVSS-U AOC allowing them to complete the RVSS-U mission?

Results (SAT)

The capability of the RVSSU to assist Border Patrol personnel with Command, Control, Communications, Computer, and Intelligence (C4I) decisions regarding the resolution of IoIs within the Arizona Border, (b) (7)(E) RVSSU AOC was evaluated during LUT from August 3 - 14, 2015 at the (b) (7)(E) AZ Border Patrol Station. The RVSSU demonstrated the capability to perform all C4I critical mission tasks of: (b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

3.4.1 SUT Deficiencies

C4I deficiencies identified during LUT are summarized in Table 7. Individual deficiency descriptions follow in the order listed.

Table 7: COI E-2, C4I Deficiency Summary

No.	Title	COI	Level
4	(b) (7)(E)		
7			
9			
10			
13			

SUT Deficiency No. 4**1. SYSTEM UNDER TEST DEFICIENCY.**

(b) (7)(E)

(b) (7)(E)

2. TEST CONDITIONS, RESULTS, AND ANALYSIS. The RVSSU was evaluated in the (b) (7)(E) AZ Border Patrol Station during the Limited User Test (LUT) conducted from 3-14 August 2015.

(b) (7)(E)

(b) (7)(E)

3. MISSION RELATION.

(b) (7)(E)

(b) (7)(E)

4. CONCLUSION.

(b) (7)(E)

5. RECOMMENDATION. Correct as soon as possible.

SUT Deficiency No. 7

1. [REDACTED] (b) (7)(E)

(b) (7)(E)

2. TEST CONDITIONS, RESULTS, AND ANALYSIS. The RVSSU was evaluated in the (b) (7)(E) AZ Border Patrol Station during the Limited User Test conducted from 3-14 August 2015.

(b) (7)(E)
(b) (7)(E)

3. MISSION RELATION. [REDACTED] (b) (7)(E)

4. CONCLUSION. [REDACTED] (b) (7)(E).

5. RECOMMENDATION. Correct as soon as practicable.

SUT Deficiency No. 9

1. SYSTEM UNDER TEST DEFICIENCY. (b) (7)(E)

(b) (7)(E)

2. TEST CONDITIONS, RESULTS, AND ANALYSIS. The RVSSU was evaluated in the (b) (7)(E) AZ Border Patrol Station during the Limited User Test conducted from 3-14 August 2015. (b) (7)(E)

3. MISSION RELATION. (b) (7)(E)

4. CONCLUSION. (b) (7)(E)

5. RECOMMENDATION. Correct as soon as practicable.

SUT Deficiency No. 10

1. SYSTEM UNDER TEST DEFICIENCY. (b) (7)(E)

(b) (7)(E)

2. TEST CONDITIONS, RESULTS, AND ANALYSIS. The RVSSU was evaluated in the (b) (7)(E), AZ Border Patrol Station during the Limited User Test conducted from 3-14 August 2015. (b) (7)(E)

(b) (7)(E)

3. MISSION RELATION. (b) (7)(E)

4. CONCLUSION. (b) (7)(E)

5. RECOMMENDATION. Correct as soon as practical.

SUT Deficiency No. 13

1. SYSTEM UNDER TEST DEFICIENCY. (b) (7)(E)

[REDACTED]

(b) (7)(E)

2. TEST CONDITIONS, RESULTS, AND ANALYSIS. The RVSSU was evaluated in the (b) (7)(E), AZ Border Patrol Station during the Limited User Test conducted from 3-14 August 2015. (b) (7)(E)

[REDACTED]

3. MISSION RELATION. (b) (7)(E)

[REDACTED]

4. CONCLUSION. (b) (7)(E)

5. RECOMMENDATION. Correct as soon as practicable.

3.4.2 Other Deficiencies Impacting this COI

- SUT Deficiency No. 3
- SUT Deficiency No. 12

3.5 Test S-4, Availability

Will the Availability of the RVSSU system support completion of its mission?

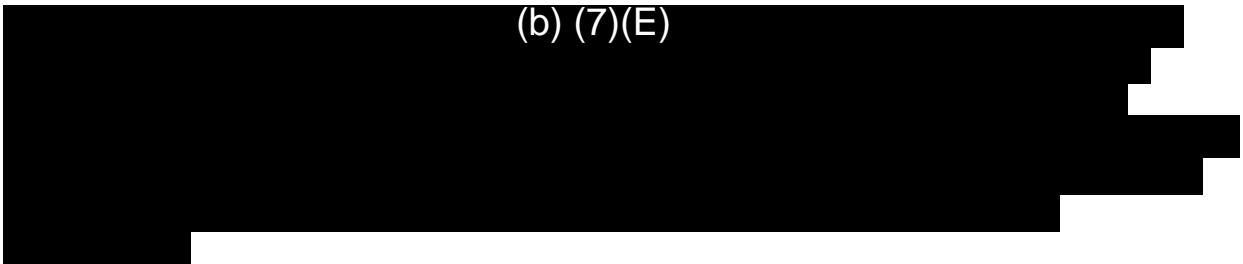
SUT Reliability, Availability, Maintainability and Logistics Supportability were evaluated as subsets of Availability COI, and are presented herein.

Results (Split Resolved: Reliability (UNSAT); Availability, Maintainability and Logistics Supportability (UNRESOLVED))

The sole TEMP Suitability COI is named Availability and was split into the following subsets for reporting: Reliability, Availability Maintainability and Logistics Supportability.

The availability of the RVSSU system to support completion of its mission was evaluated during LUT from August 3 - 14, 2015 at the (b) (7)(E) AZ Border Patrol Station. Quantitative data were provided under RVSSU Integrated Contractor Support Plan, as documented in the monthly Contractor Maintenance Logistic Support report, and from Test Observation Reports.

(b) (7)(E)



(b) (7)(E)



3.5.1 SUT Deficiencies

Suitability deficiencies identified during LUT are summarized in Table 8. Individual deficiency descriptions follow in the order listed.

Table 8: COI S-4, Availability Deficiency Summary

No.	Title	COI	Level
8	(b) (7)(E)		
1			
2			
3			

SUT Deficiency No. 8**1. SYSTEM UNDER TEST DEFICIENCY.**

(b) (7)(E)

(b) (7)(E)

2. TEST CONDITIONS, RESULTS, AND ANALYSIS. The RVSSU was evaluated in the (b) (7)(E) AZ Border Patrol Station during the Limited User Test conducted from 3-14 August 2015. Test team assessment of the contracted maintenance and logistic support implemented for RVSSU revealed (b) (7)(E)

- (b) (7)(E)
-
-
-
-

(b) (7)(E)

3. MISSION RELATION.

(b) (7)(E)

4. CONCLUSION.

(b) (7)(E)

5. RECOMMENDATION.

(b) (5), (b) (7)(E)

SUT Deficiency No. 1**1. SYSTEM UNDER TEST DEFICIENCY.** (b) (7)(E)

[REDACTED]

a.

b.

c.

(b) (7)(E)

2. TEST CONDITIONS, RESULTS, AND ANALYSIS. The RVSSU was evaluated in the (b) (7)(E), AZ Border Patrol Station during the Limited User Test conducted from 3-14 August 2015. Normal system operations (b) (7)(E)

[REDACTED]

3. MISSION RELATION. (b) (7)(E)

[REDACTED]

4. CONCLUSION. (b) (7)(E).**5. RECOMMENDATION.** (b) (5), (b) (7)(E)
(b) (5)

SUT Deficiency No. 2**1. SYSTEM UNDER TEST DEFICIENCY.**

(b) (7)(E)

(b) (7)(E)

2. TEST CONDITIONS, RESULTS, AND ANALYSIS. The RVSSU was evaluated in the (b) (7)(E), AZ Border Patrol Station during the Limited User Test conducted from 3-14 August 2015.

(b) (7)(E)

3. MISSION RELATION.

(b) (7)(E)

4. CONCLUSION.

(b) (7)(E)

5. RECOMMENDATION.

(b) (5), (b) (7)(E)

(b) (5), (b) (7)(E)

3.5.2 Government Furnished Equipment (GFE) Deficiency

(b) (7)(E)

GFE Deficiency No. 3

1. GOVERNMENT FURNISHED EQUIPMENT DEFICIENCY. (b) (7)(E)

(b) (7)(E)

2. TEST CONDITIONS, RESULTS, AND ANALYSIS. The RVSSU was evaluated in the (b) (7)(E), AZ Border Patrol Station during the Limited User Test conducted from 3-14 August 2015. As documented in Test Observation Reports (TOR), TOR-893 & TOR-922, (b) (7)(E)

(b) (7)(E)

3. MISSION RELATION. (b) (7)(E)

~~For Official Use Only~~

(b) (7)(E)

4. CONCLUSION. (b) (7)(E)
5. RECOMMENDATION. Correct as soon as possible.

3.5.3 Other Deficiencies Impacting this COI

None.

3.5.4 Availability OPCONS

3.5.4.1 Workstation PC Cooling Vents (Maintainability)

During the (b) (7)(E) LUT, the test team (b) (7)(E)

3.5.4.2 Operator Training (Logistics Supportability)

During the (b) (7)(E) LUT, the test team evaluated the system support package for Operator Training. The test team observed that (b) (7)(E)

4 RECOMMENDATIONS

4.1 LUT Deficiency Summary

(b) (7)(E)

Table 9: RVSSU LUT Deficiency Summary

RVSSU LUT Deficiency Summary				
No.	Title	COI	Level	Recommendation
1	(b) (7)(E)	(b) (7)(E)	(b) (7)(E)	(b) (5), (b) (7)(E)
2				
3				Correct as soon as possible
4				Correct as soon as possible
5				Correct as soon as possible
6				Correct as soon as practicable
7				Correct as soon as practicable
8				(b) (5), (b) (7)(E)
9				Correct as soon as practicable
10				Correct as soon as practicable

RVSSU LUT Deficiency Summary				
No.	Title	COI	Level	Recommendation
11	(b) (7)(E)			Correct as soon as practicable
12				Correct as soon as practicable
13				Correct as soon as practicable

(b) (7)(E)

(b) (7)(E)

4.2 Operational Considerations

Implement the following OPCONs to enhance system operations and sustainment:

- (b) (7)(E)
- (b) (7)(E)

Appendix A DETAILED TEST DATA AND RESULTS

A.1 Background

This appendix presents specific MOE and MOS data referenced in the body of this report, which supports COI evaluation. All KPP, MOE, and MOS data are organized by COIs. Each KPP, MOE, or MOS result is followed by the supporting data used to calculate the associated result. Validation success criteria and analysis methods used are described in reference 4, RVSSU LUT Data Management and Analysis Plan.

A.2 Effectiveness COIs

Data used in the LUT evaluation was collected from three sources:

- DT Data
- CBP Shift Activity Report (SAR) data collected from completion of system build out on December 17, 2014 to February 28, 2015, when CBP ended the recording of this data.
- Data collected during the LUT

A.2.1 (b) (7)(E)

The (b) (7)(E) was evaluated using the combined effect of the quantitative and qualitative measures associated with (b) (7)(E). This traceability is further described in Table E-1, Operational Requirements Traceability Matrix.

A.2.1.1 (b) (7)(E)

The LUT validated this result.

A.2.1.2 (b) (7)(E)

The LUT validated these results.

Table A-1: (b) (7)(E)

Measure	Camera / Sensor	DT Results	LUT Results	Threshold
(b) (7)(E)				

A.2.1.3 (b) (7)(E)

[REDACTED]

Results are presented in Table A-2.

A.2.1.4 (b) (7)(E)
(b) (7)(E)

[REDACTED]

Results are presented in Table A-2.

Table A-2: (b) (7)(E)

Measure	Camera / Sensor	DT Results	LUT Results	Threshold
(b)	(7)	(E)		

A.2.1.5 Analysis of CBP RVSSU SAR Data**A.2.1.5.1** (b) (7)(E)

[REDACTED]

A.2.1.5.2 (b) (7)(E)

[REDACTED]

A.2.1.5.3 (b) (7)(E)

[REDACTED]

(b) (7)(E)

Figure A-1 depicts the initial detection source distribution.

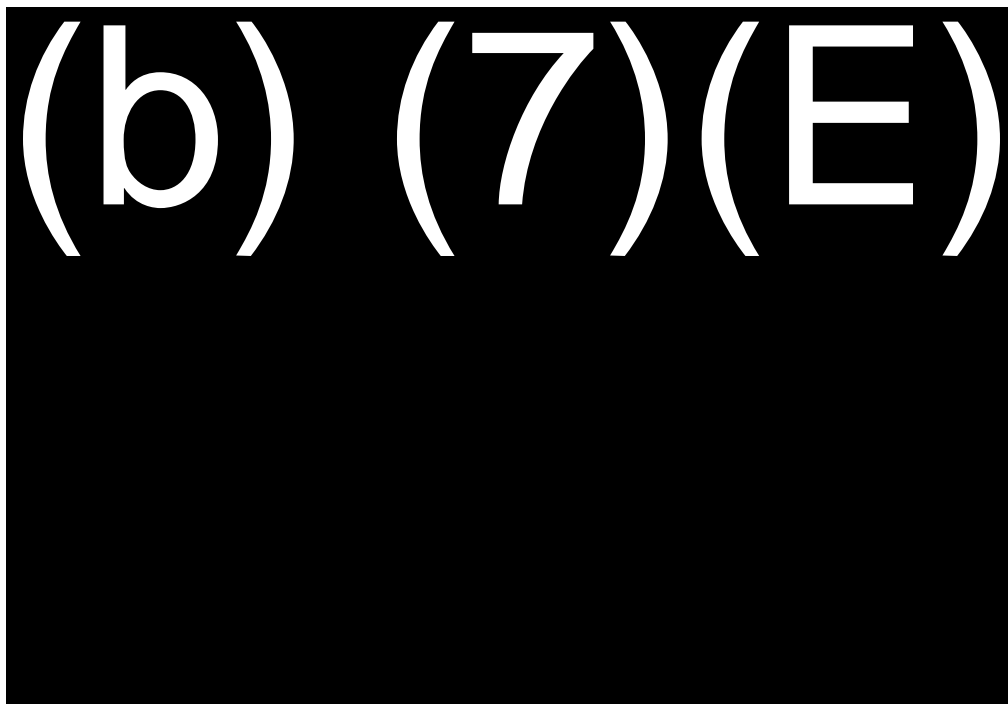


Figure A-1: Distribution of IoI Detection Sources from CBP RVSSU SAR Data

A.2.1.5.4 IoI Detection Outcomes

The CBP RVSSU SAR data was analyzed for reported detection outcomes, depicted in Figure A-2.

(b) (7)(E)

CBP Historical data was not available for comparison.

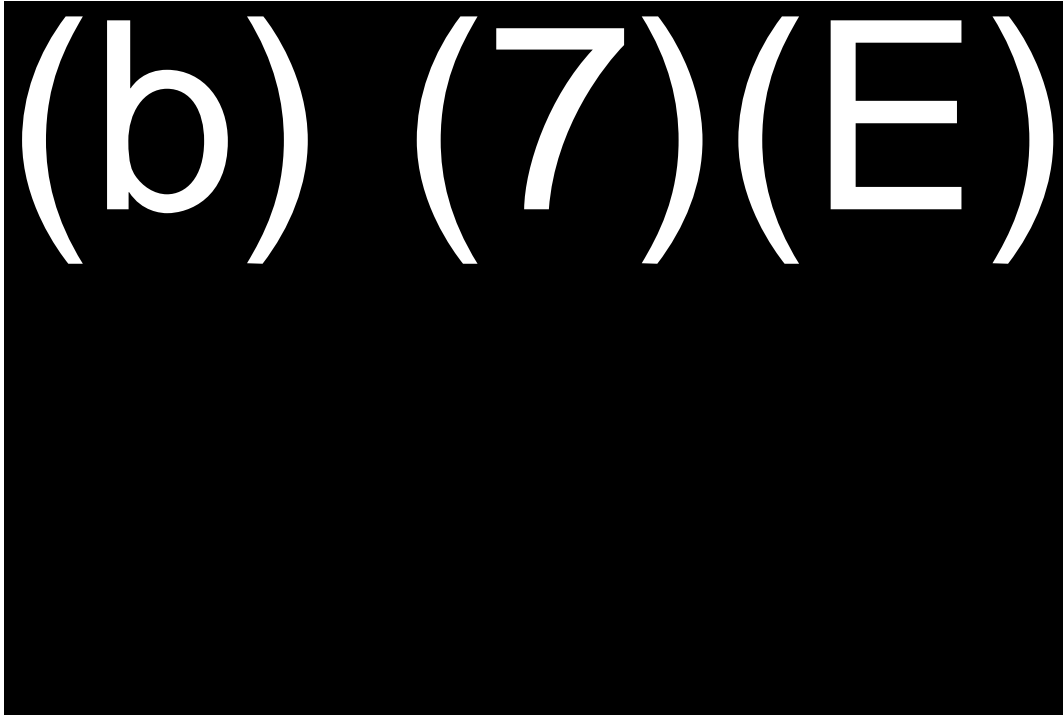


Figure A-2: IoI Apprehension, Turn-Back, and Get-Away Percentages

A.2.1.5.5 IoI Detection Location Distribution

The CBP RVSSU SAR data was analyzed for the distribution of reported detections across the RVSSU Area of Coverage (AOC), within the (b) (7)(E) Area of Responsibility (AOR). (b) (7)(E)

[REDACTED] Figure A-3 depicts the detection concentrations within the RVSSU (b) (7)(E) AOC.

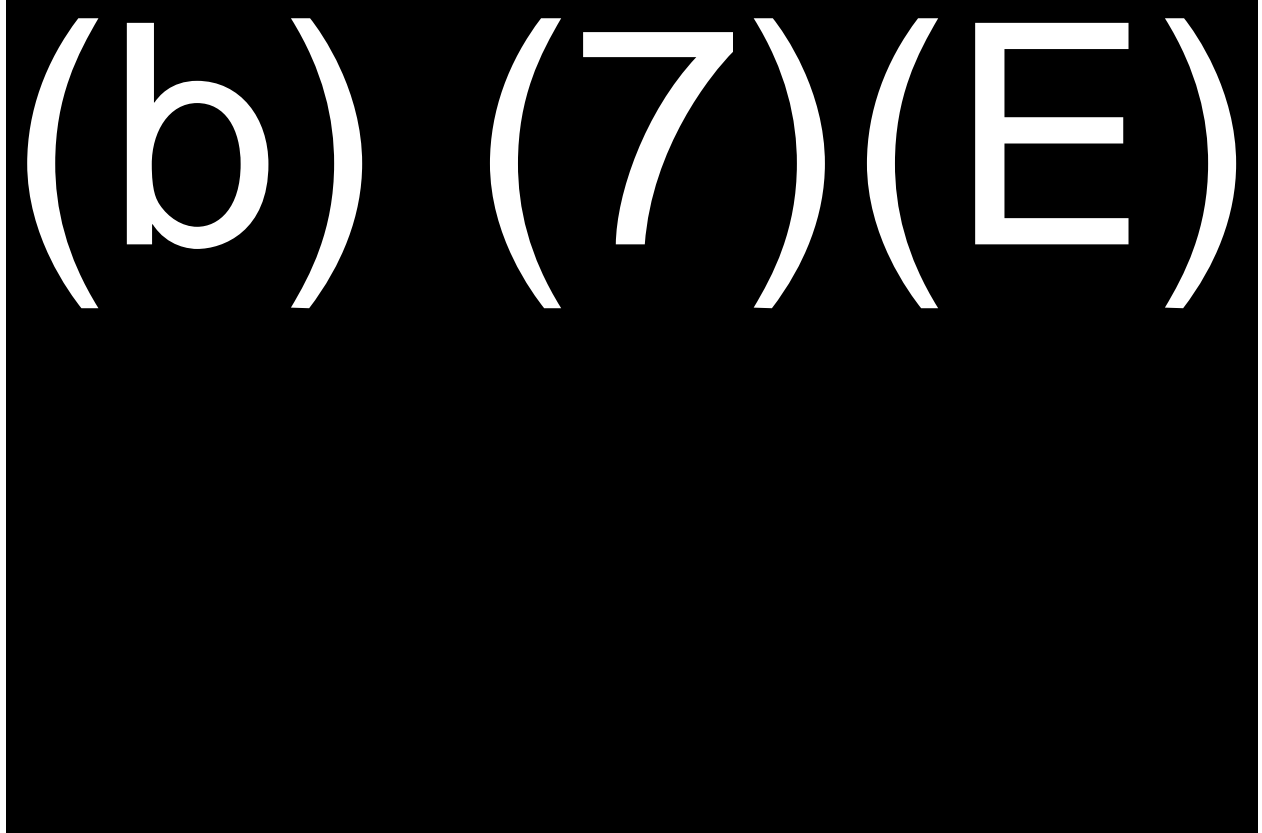


Figure A-3: Detection Concentrations for CBP RVSSU SAR Data

A.2.1.5.6 IoI Detection Ranges by Tower and Camera Type

(b) (7)(E)	
------------	--

Table

A-3 summarizes the mean detection distance by tower and camera type.

Table A-3: Detection Distance by Tower and Camera Type

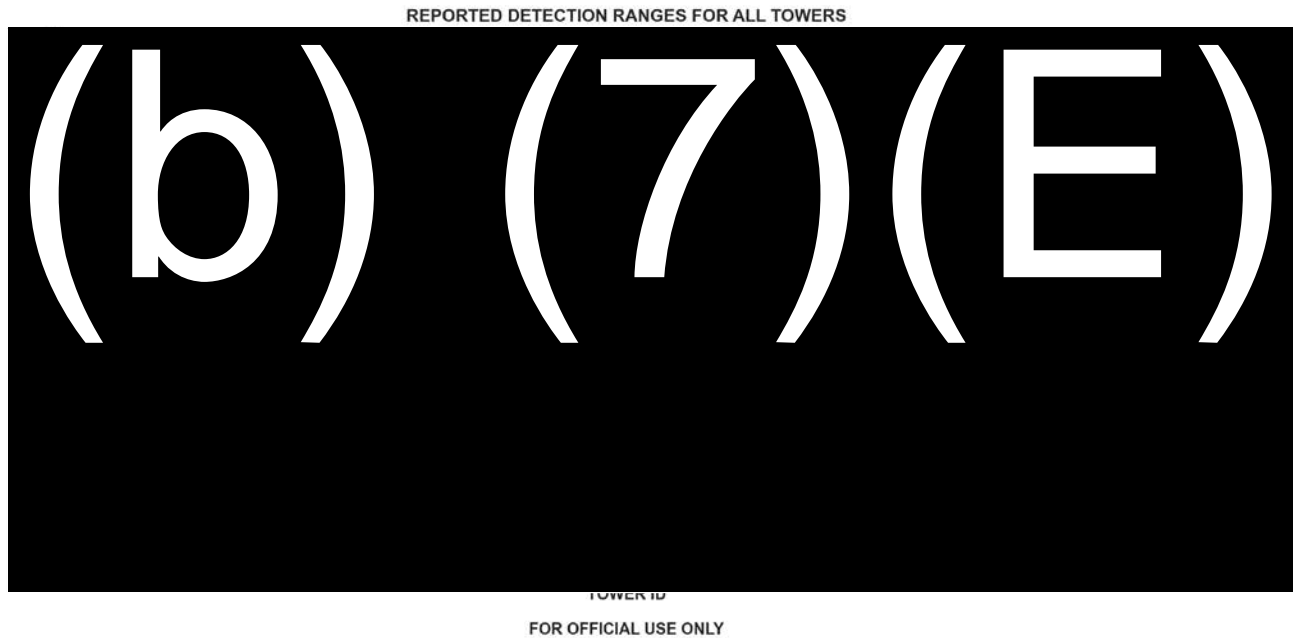


Figure A-4: Detection Ranges by Tower

Figure A-5 depicts reported IoI detection count by tower and camera type.

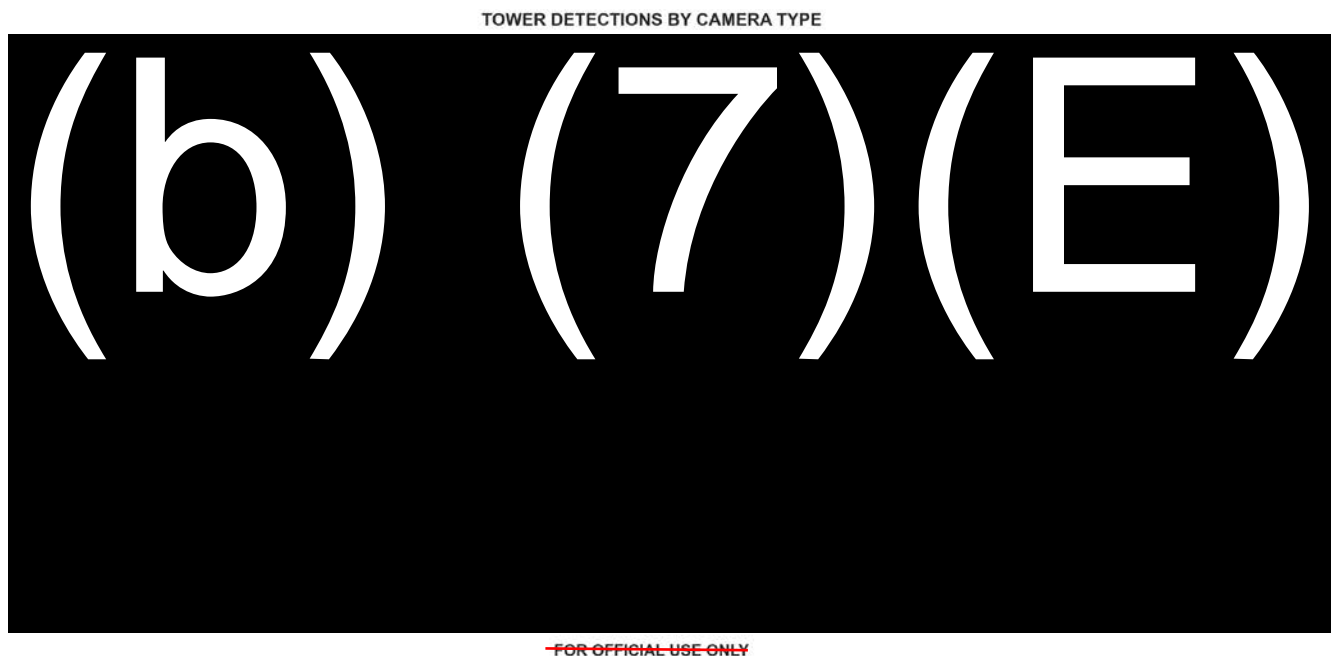


Figure A-5: Detection Count by Tower and Camera Type

A.2.1.6 (b) (7) (E) Analytics False Detect Rate

(b) (7) (E)

~~For Official Use Only~~

(b) (7)(E) Test detects were binned into three categories listed below:

- False Detect – (b) (7)(E)
- No Detect – (b) (7)(E)
- Valid Detect – (b) (7)(E)

(b) (7)(E)

Table A-4 provides summary data results.

Table A-4: Analytics Detect Summary

(b) (7)(E)

(b) (7)(E)

A.2.1.7 (b) (7)(E) Geolocation Accuracy

The RVSSU geolocation accuracy was evaluated during LUT. Data were collected in demonstration, scripted and free play events,

(b) (7)(E)

Results are summarized in

Table A-5, with supporting data in Table A-6.

(b) (7)(E)

Table A-5: Geolocation Accuracy Results

Geolocation Accuracy Results Table						
Subset	Min Error	Max Error	Mean Error	Median Error	Threshold	Sample Size
(b) (7)(E)						

~~For Official Use Only~~

Table A-6: Geolocation Accuracy Data

(b) (7)(E)

~~For Official Use Only~~

(b) (7)(E)

~~For Official Use Only~~

Figure A-6 illustrates the prevalent geolocation accuracy error mode observed during the LUT.

(b) (7)(E)

(b) (7)(E)

Figure A-6: Geolocation Accuracy Error Mode

~~For Official Use Only~~

A.2.1.8

(b) (7)(E)

with results shown in Table A-7.

A.2.1.9

(b) (7)(E)

Table A-7:

(b) (7)(E)

(b) (7)(E)

A.2.1.10

(b) (7)(E)

Results are shown in Table A-8.

A.2.1.11

(b) (7)(E)

Results are shown in Table A-8.

Table A-8: SRHD Vignette data for (b) (7)(E)

(b) (7)(E)

A.2.1.12

(b) (7)(E)

(b) (7)(E)

Table A-9: SRHD Classification of Special Characteristics

(b) (7)(E)

Table A-10: All Vignette Data for Measures 9, 10, 11, and 13

(b) (7) (E)

~~For Official Use Only~~

(b) (7)(E)

~~For Official Use Only~~

Table A-11: Vignette Data for Measure 12

(b) (7) (E)

~~For Official Use Only~~

(b) (7)(E)

~~For Official Use Only~~

A.2.2 (b) (7)(E)

(b) (7)(E)

A.2.2.1

(b) (7)(E)

(b) (7)(E)

A2.2.3

(b) (7)(E)

(b) (7)(E)

A2.2.4 (b) (7)(E) System Security- The RVSS is protected against unauthorized access to the system and its data in accordance with DHS/CBP policy and procedures. (b) (7)(E)

A.3 Availability Suitability COI

The sole TEMP Suitability COI is named Availability and is discussed here in the following subsets: Reliability, Maintainability, Availability and Supportability.

A.3.1 Reliability

RVSSU Reliability was evaluated using the (b) (7)(E). Reliability data were collected over the 11-day LUT period. (b) (7)(E)

The MTBCF Threshold is derived from Table 4 of reference 8, Integrated Contractor Support Plan (ICSP) For CBP-OTIA-RVSS, Release 2.0

Table A-12: Reliability Results Summary

Reliability Results			
Measure	Parameter	LUT Results	Threshold
(b) (7)(E)			

(b) (7)(E)

Table A-13: SUT Critical Failure Log

SUT Critical Failure Log							
ID	Summary	Corrective Action	Root Cause	Subsystem	Occurrence Date	C.F. Down Time (SUT) Min.	C.F. Down Time (GOV) Min.
(b) (7)(E)							

~~For Official Use Only~~

SUT Critical Failure Log							
ID	Summary	Corrective Action	Root Cause	Subsystem	Occurrence Date	C.F. Down Time (SUT) Min.	C.F. Down Time (GOV) Min.
(b) (7) (E)							

~~For Official Use Only~~

SUT Critical Failure Log							
ID	Summary	Corrective Action	Root Cause	Subsystem	Occurrence Date	C.F. Down Time (SUT)	C.F. Down Time (GOV)
(b) (7) (E)							

~~For Official Use Only~~

SUT Critical Failure Log							
ID	Summary	Corrective Action	Root Cause	Subsystem	Occurrence Date	C.F. Down Time (SUT) Min.	C.F. Down Time (GOV) Min.
(b) (7) (E)							

~~For Official Use Only~~

SUT Critical Failure Log							
ID	Summary	Corrective Action	Root Cause	Subsystem	Occurrence Date	C.F. Down Time (SUT) Min.	C.F. Down Time (GOV) Min.
(b) (7) (E)							

~~For Official Use Only~~

SUT Critical Failure Log							
ID	Summary	Corrective Action	Root Cause	Subsystem	Occurrence Date	C.F. Down Time (SUT) Min.	C.F. Down Time (GOV) Min.
(b) (7) (E)							

The following Critical Failures attributed to the Government (vice SUT) were identified from TORs, CBP TSRs, and ICSP Maintenance Data.

~~For Official Use Only~~

Table A-14: Government Critical Failure Log

Government Critical Failure Log				
TOR / Maintenance Ticket ID	Type	Title	Description	Critical Failure Category
(b) (7)(E)				

LUT Critical Failure occurrences by category are depicted in Figure A-7. Outage duration by category are depicted in Figure A-8.

~~For Official Use Only~~

LUT ALL FAILURES: OCCURRENCES

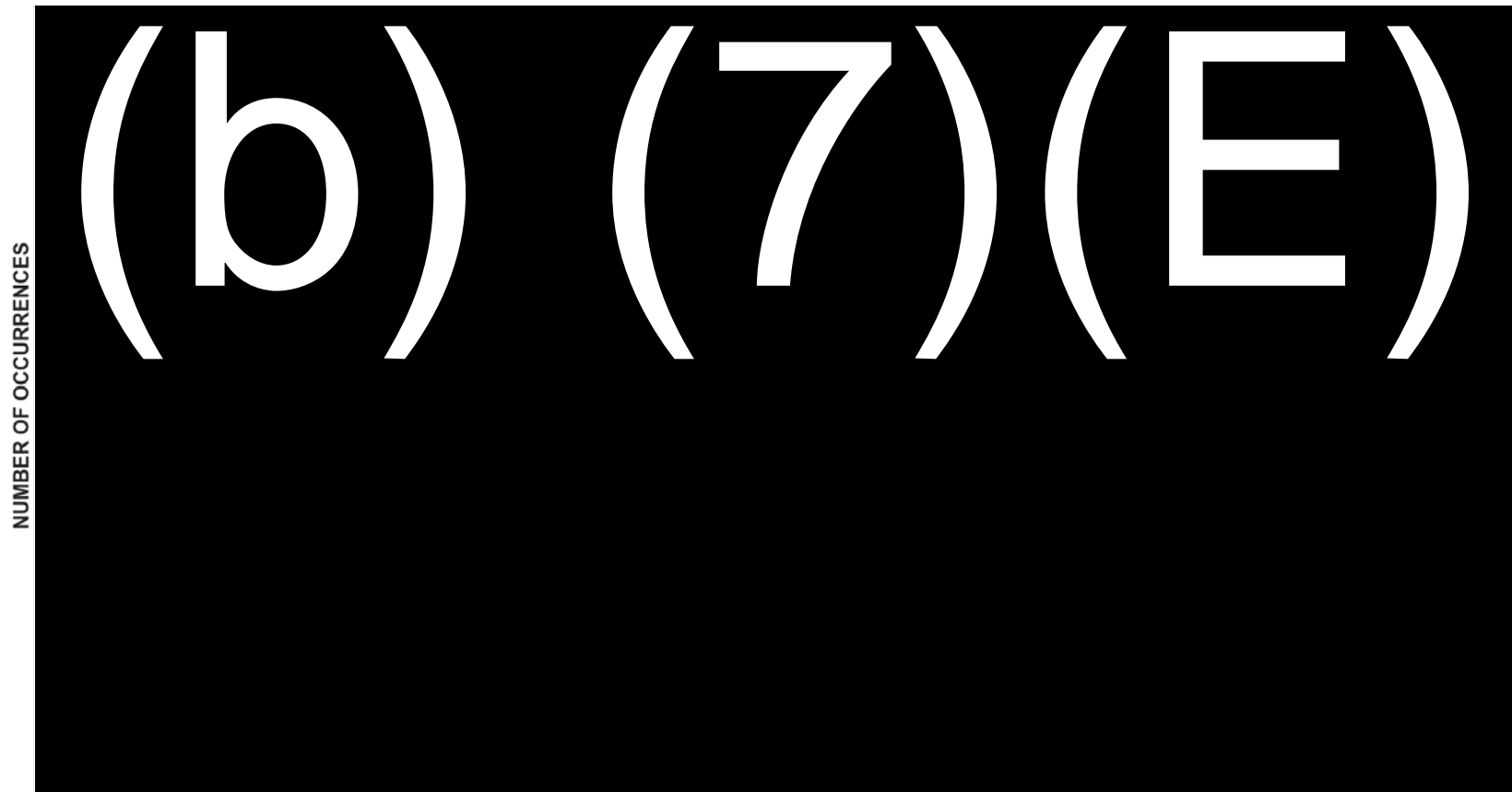


Figure A-7: Critical Failures by Category

~~For Official Use Only~~



Figure A-8: Outage Duration by Category

~~For Official Use Only~~

Table A-14 provides a summary of LUT RAM Data.

Table A-14: LUT RAM Data Summary

System Total Time	(b) (7)(E)
System Uptime	
System Downtime	
Number of Critical Failures	
Mean Time Between Critical Failures	
Test Start Time	
Test End Time	
Uptime to Total Time Ratio	

A.3.2 Availability

RVSSU Availability was evaluated using the following Measures: (b) (7)(E)

Availability data were collected during the 11-day LUT period.

(b) (7)(E)

he RVSSU uses Integrated Contractor Support Plan (ICSP), reference (8). LUT Results are presented in table A-9, with supporting data located in Appendix D. Data are additionally reported from the ICSP CMLS Services Monthly Activity Report, reference (10).

~~For Official Use Only~~

Table A-15: RVSSU Operational Availability (A_o)

RVSSU Operational Availability (A _o)			
Test Period	Report	Percent (x.xx%)	Threshold
SAT	(b) (7) (E)		
SAT			
LUT			
August 2015			
Cumulative since CMLS commenced: Aug 2014 through July 2015. (Cumulative through August has not been provided as of 9/24/15)			

Table A-16: Communications Subsystem Availability

Communications Subsystem Availability			
Test Period	Report	Percent (xx.xxx %)	Threshold
LUT	(b) (7)(E)		
August 2015			

~~For Official Use Only~~

A.3.3 Maintainability

RVSSU Maintainability was evaluated using the following Measure: (b) (7)(E). Suitability data were collected during the 11-day LUT period. The RVSSU uses Integrated Contractor Support, as described in the Integrated Contractor Support Plan (ICSP), reference (8). Results are presented in table A-17, with supporting data located in Appendix D.

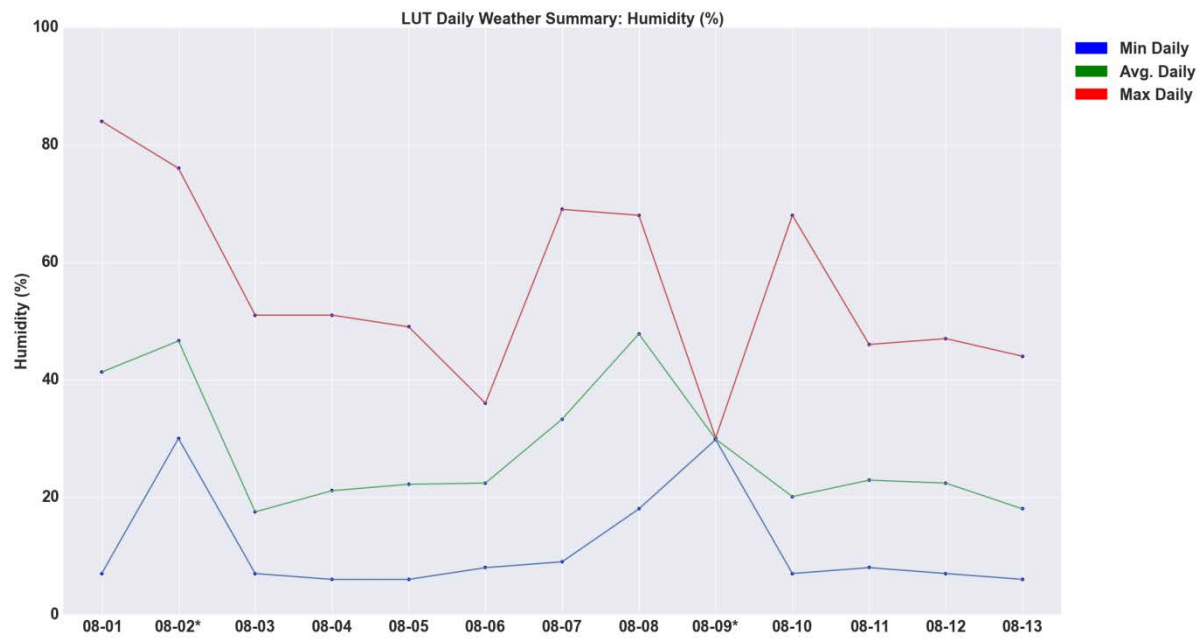
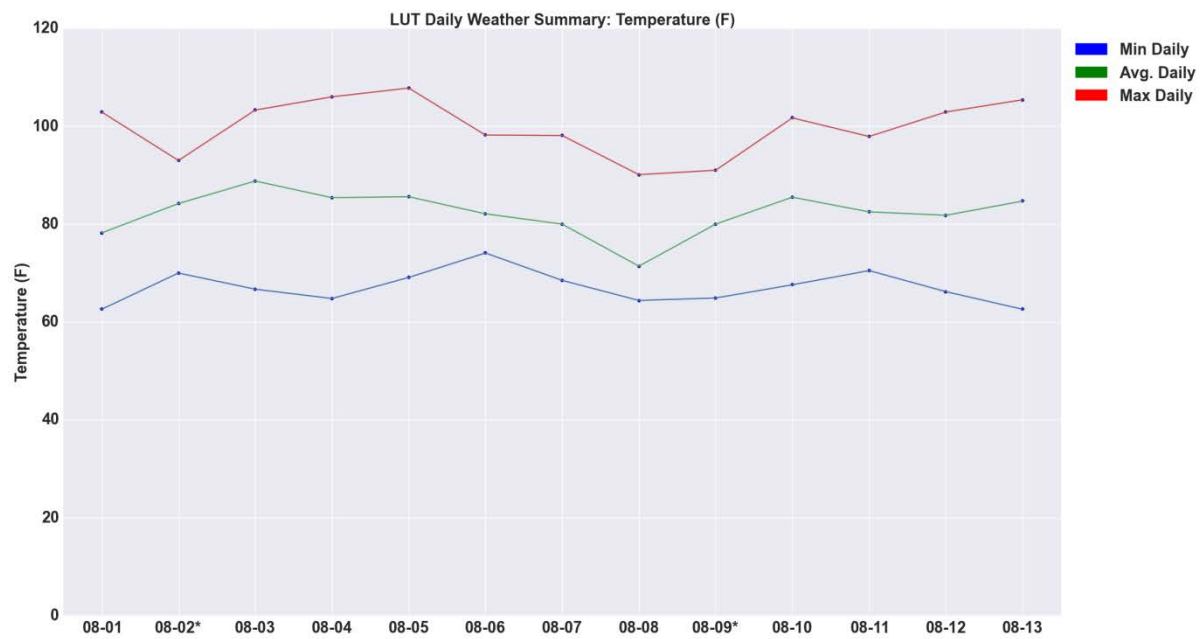
Table A-17: Maintainability Results Summary

Maintainability Results Summary			
Measure	Parameter	LUT Results	Threshold
(b) (7)(E)			
(b) (7)(E)			
(b) (7)(E)			

Additional maintainability analysis is found in paragraph D.2.

A.4 (b) (7)(E) Weather Summary

Min, Mean and Max values recorded by Campana Plaza (KAZNOGAL1) weather station during LUT for Humidity, Temperature and Wind Speed are depicted in figures A-9 to A-11 below. No humidity and wind speed data was available for 8/9.

**Figure A-9: Daily Humidity Summary****Figure A-10: Daily Temperature Summary**

~~For Official Use Only~~

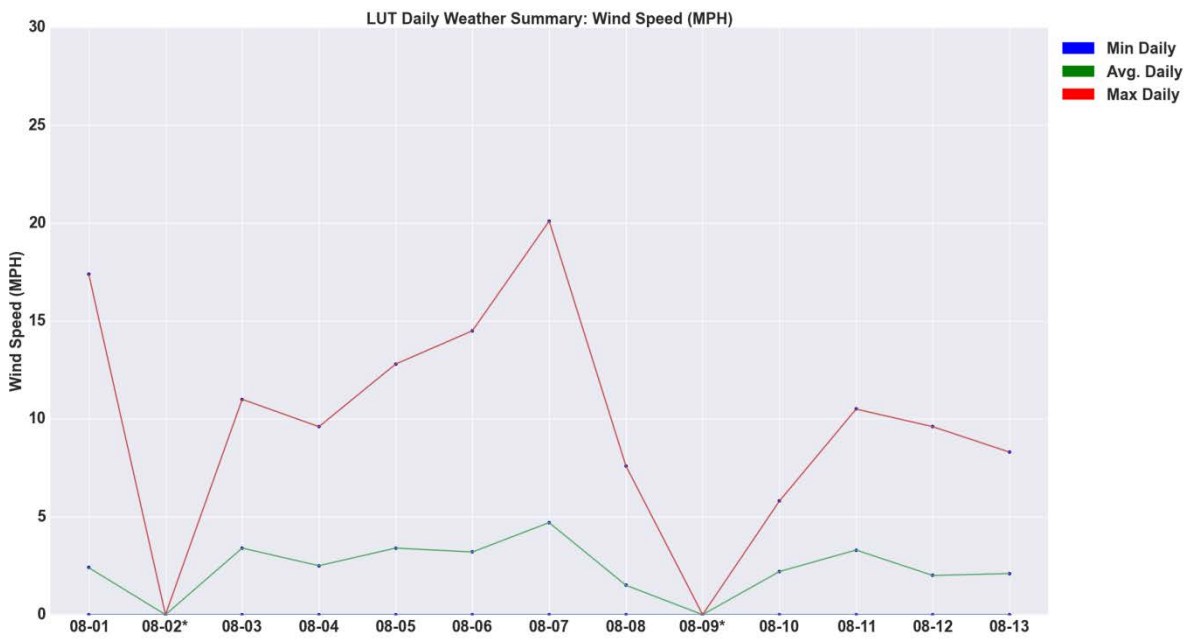


Figure A-11: Daily Wind Speed Summary

Appendix B EVALUATION METHODOLOGY

B.1 Test Conduct

The LUT was designed to collect data and evaluate RVSSU performance with respect to the TOs and COIs defined in Section 1. The system was operated by CBP Agents in the (b) (7)(E) operating environment. The system was maintained under contractor maintenance and logistics support. OEB, ITO and OTIA personnel conducted the test event. CBP Agents organized in (b) (7)(E)

Personnel skills required for the operation of the RVSSU were obtained through the Program-provided Train the Trainer operator course at the (b) (7)(E) RVSSU Training Facility, locally developed On-the-Job Training (OJT) for operators performed at (b) (7)(E) RVSSU C2F, and prior familiarity with legacy RVSS system.

Using the Continuous Operational Evaluation approach, the test team previously observed the Program provided training in July 2014. Three developmental test periods in (b) (7)(E) AoR were previously observed and reported via Letters of Observation.

B.2 Event Deviations

All effectiveness and suitability tests were conducted per reference (3). The following test plan deviations occurred during the test:

- (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)

B.3 Limitations

B.3.1 (b) (7)(E)

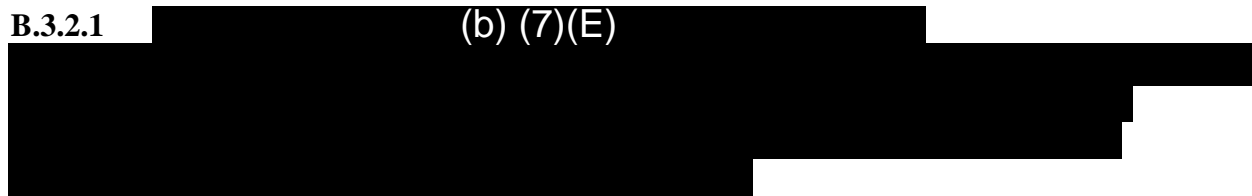
(b) (7)(E)

B.3.2 (b) (7)(E)

(b) (7)(E)


B.3.2.1

(b) (7)(E)

A large rectangular area of the document is completely blacked out, indicating redacted content.

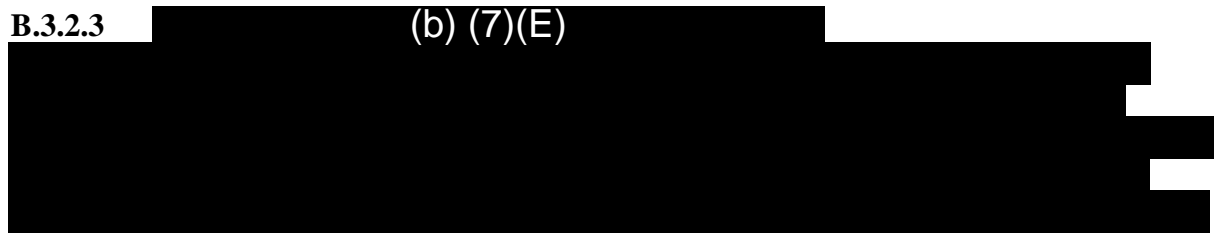
B.3.2.2

(b) (7)(E)

A large rectangular area of the document is completely blacked out, indicating redacted content.

B.3.2.3

(b) (7)(E)

A large rectangular area of the document is completely blacked out, indicating redacted content.

B.3.3

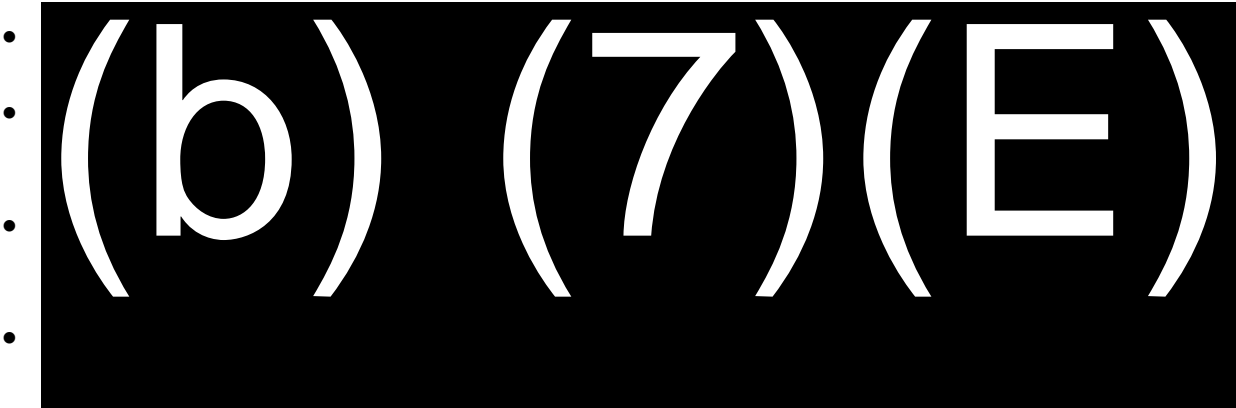
(b) (7)(E)

A horizontal rectangular area of the document is completely blacked out, indicating redacted content.

-
-
-
-
-
-
-

(b) (7)(E)

A large rectangular area of the document is completely blacked out, indicating redacted content.



B.4 OEB Evaluation Process

This LUT report provides a determination of effectiveness and suitability of the RVSSU in the (b) (7)(E), AZ operational environment. The evaluation was based on the Continuous Operational Evaluation approach of the SUT, as observed during multiple integrated test periods and culminating in the dedicated LUT period. This was accomplished by using a Mission-Based Test Design (MBTD), developed in a trial process within OEB and documented in the draft RVSSU Integrated Evaluation Framework (IEF), reference (11). The evaluation review process established in the LUT Plan, reference (3), presents a standardized, repeatable evaluative process for SUT performance, in order to: classify issues, characterize deficiencies, make overall COI resolutions, determine effectiveness and suitability, and make system deployment recommendations.

B.4.1 Definitions

OEB used the following definitions throughout the evaluative process.

B.4.1.1 SUT Deficiencies

Deficiencies noted during test that can be directly tied back to a specified or derived requirement that the USBP sponsor has funded the PM to deliver are listed in SUT deficiency paragraphs under the applicable COIs. The SUT evaluation was based on the contribution of the SUT, as defined by specified and derived requirements, to the SoS. SUT deficiencies were used in the resolution of appropriate COIs, SUT operational effectiveness and suitability determinations, and deployment recommendations.

B.4.1.2 SoS Deficiencies

Deficiencies noted during test that cannot be directly tied back to a threshold or derived requirement, but are necessary for mission accomplishment of the SUT when operating in the SoS environment, or are required for the full employment of the SUT in its intended SoS operating environment are listed in SoS deficiency paragraphs under the applicable COIs. SoS deficiencies were used in the resolution of appropriate COIs, and the SoS operational effectiveness and suitability determinations. However, there were no SoS issues identified during this test.

B.4.1.3 Deficiency

A deficiency is defined as lacking in some necessary quality, capability, or element or not up to a normal standard or complement. Operational capability is defined as an ability or means that is

directly traceable to an approved requirement (i.e., ORD, FSD, CONOPS, etc). Mission-essential capability is defined as an ability that is inherently necessary to complete an assigned mission.

B.4.1.4 Workaround

The particular issue can be resolved with additional training and/or experience such that the operator knows to do something (or not do something) that is otherwise not part of the normal training syllabus (operator compensation), or the operator solves the issue by taking some alternative course of action to accomplish the same result (work-around). To be acceptable, it must be an action, or series of actions, that can reasonably be accomplished by an average operator without excessive impact to other capabilities. It is important to note that operator compensation and work-around can be engineered into the training for system operators. An acceptable work-around cannot avoid use of the system.

B.4.1.5 Operational Consideration (OPCON)

OPCONs are used to document tactical considerations that inform supervisors of significant aspects (pro and con) of system employment, or make clear what special measures would be required to make the system more effective in operational use. Although it may present supporting data or examples, it is not a deficiency paragraph by another name. It is a recommendation for the user to consider in the employment or management of the SUT and/or SoS in operational use.

B.4.1.6 Baseline Deficiency Definitions

Table B-1 contains the SUT and SoS baseline deficiency definitions used throughout the evaluative process.

Table B-1: Baseline Deficiency Definitions

Baseline Deficiency Definitions	
Severe	Precludes mission accomplishment
Major 1	Critical impact on mission accomplishment
Major 2	Serious impact on mission accomplishment
Major 3	Moderate impact on mission accomplishment
Minor	No significant impact on mission accomplishment

Figure B-1 contains the SUT and SoS baseline deficiency definitions flow diagram used throughout the evaluative process.

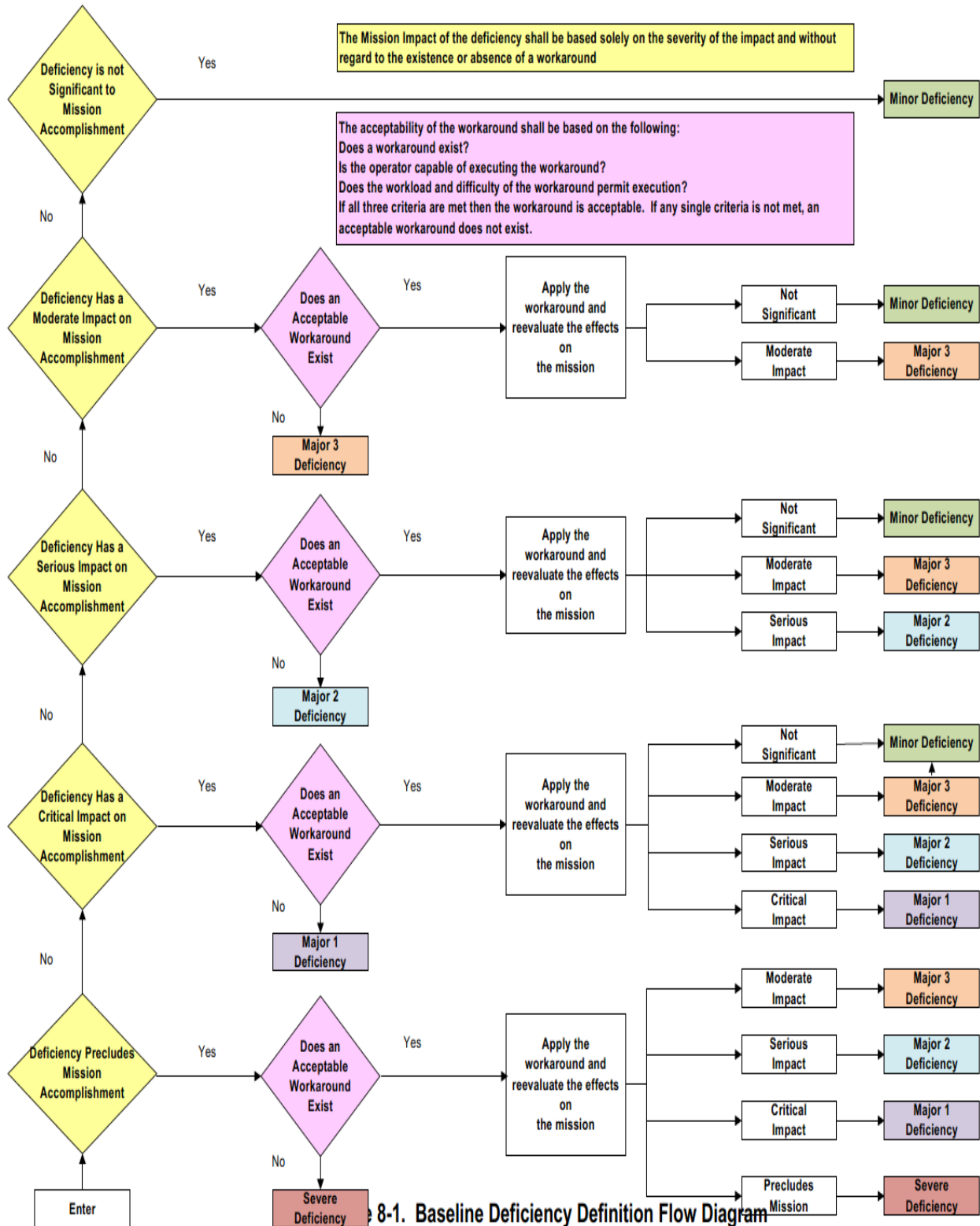


Figure B-1: Baseline Deficiency Definition Flow Diagram

B.4.1.7 COI Resolution

The resolution of COIs is addressed by satisfying the questions posed by the COIs. Derived from the MBTD process and IEF, the test plan provides an audit trail from the COI questions through the critical mission tasks to the critical system attributes and measures. This trail provides a logical flow path so that the disposition of COIs is directly related to the evaluation of each designed test. Thus, when a test parameter is quantitative, the COI resolution is based on actual results relative to the operational threshold. For non-quantifiable parameters, the COI resolution must be based on two factors: (1) observed results and (2) operational experience and judgment. Additionally, the number and severity of the deficiencies and their cumulative/aggregate impact on mission performance associated with the COI is considered for COI resolution. The resolution of COIs should be a subjective assessment of COI results by comparing adverse results against the full scope of the COI. In the end, the case should be clearly made to support weighing the positive test outcomes versus the negative outcomes for the critical mission tasks and subtasks. The audience should come away with a firm understanding as to why the scales tipped to either the positive (satisfactory) or negative (unsatisfactory). Potential COI resolution conclusions include: Resolved SAT or UNSAT, Unresolved, Split Resolution, or Not Tested.

B.4.1.7.1 Resolved

The COI was tested and resolved either SAT or UNSAT

B.4.1.7.2 Unresolved

Used when a COI requires further testing for final resolution due to a major or severe limitation. This is used when the COI has been tested, but cannot be resolved.

B.4.1.7.3 Not Tested

Used only when the COI was not tested during the particular phase of testing in which it was an issue for resolution. This may be due to the absence of a key test resource that poses a major or severe limitation to the test of the COI or it may be due to a decision by the Resource Sponsor to defer testing of certain aspects of the SUT until a future test period.

B.4.1.7.4 Effectiveness

Effectiveness is a combination of two concepts: does the system meet requirements and does the system maintain or improve mission capability when used by the operators. The evaluation of effectiveness is always a combination of these concepts. A good rule of thumb is: will the system make the user more effective than he/she was before?

B.4.1.7.5 Effective / Suitable

Ideally, all effectiveness / suitability COIs were completely and satisfactorily resolved, and there were no severe or major (1, 2, or 3) deficiencies. However, through the evaluative process, it is possible for the system to be determined effective / suitable with one or more major (1, 2, or 3) deficiencies and/or unsatisfactory COI resolutions. If as a result of deferrals or limitations to test, there are COIs or portions of COIs that remain unresolved/not tested, characterize the system effectiveness / suitability as accurately as possible and recommend additional OT&E to resolve these areas.

B.4.1.7.6 Not Effective

Regardless of the SUT performance when compared to the KPPs and the KSAs, if the operator is unable to successfully employ the system to accomplish the mission, it will be deemed not effective.

B.4.1.7.7 Not Suitable

Regardless of the SUT performance when compared to the KPPs and the KSAs, if the operator is unable to successfully maintain and sustain the system to deliver the required mission capability, it will be deemed not suitable.

Appendix C TEST OBSERVATION REPORT LOG**C.1 Test Observation Reports (TORs)**

The Test Team created (b) (7)(E)

(b) (7)(E)

There were no Safety or Procedure TORs created during LUT.

The complete list of all RVSSU LUT TORs can also be found on CORE under the RVSS LUT menu.

Table C-1: Test Observation Report Log

Test Observation Report Log			
TOR ID	Type	Title	Description
(b) (7)(E)			

~~For Official Use Only~~

Test Observation Report Log			
TOR ID	Type	Title	Description
(b) (7) (E)			

~~For Official Use Only~~

Test Observation Report Log			
TOR ID	Type	Title	Description
(b) (7) (E)			

~~For Official Use Only~~

Test Observation Report Log			
TOR ID	Type	Title	Description
(b) (7) (E)			

~~For Official Use Only~~

Appendix D **SERVICE REQUEST AND MAINTENANCE TICKET LOGS**

D.1 Technical Service Requests (TSR)

(b) (7)(E)

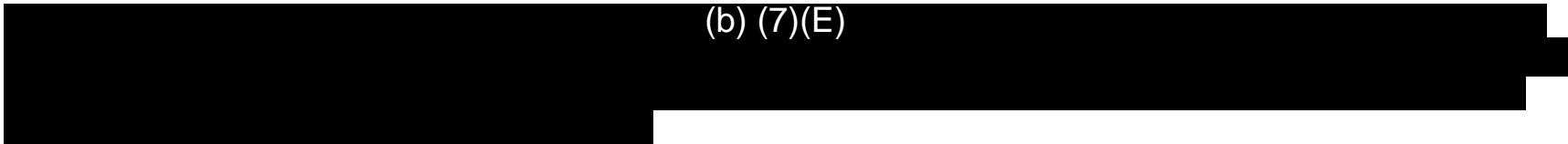
A large black rectangular redaction box covering the content of the table.

Table D-1: CBP TSR Log for LUT

CBP TSR Log for LUT

(b) (7)(E)

~~For Official Use Only~~

CBP TSR Log for LUT

(b) (7) (E)

~~For Official Use Only~~

CBP TSR Log for LUT

(b) (7)(E)

D.2 Maintenance Tickets

(b) (7)(E)

~~For Official Use Only~~

(b) (7)(E)

Further failure mode analysis is detailed in section A3, Reliability.

Table D-2: ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)										
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) min.	Outage (GOV) min.	Root Cause	Corrective Action
(b) (7)(E)										

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)										
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) min.	Outage (GOV) min.	Root Cause	Corrective Action
(b) (7)(E)										

~~For Official Use Only~~

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)										
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) min.	Outage (GOV) min.	Root Cause	Corrective Action
(b) (7)(E)										

~~For Official Use Only~~

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)										
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) min.	Outage (GOV) min.	Root Cause	Corrective Action
(b) (7)(E)										

~~For Official Use Only~~

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)										
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) min.	Outage (GOV) min.	Root Cause	Corrective Action
(b) (7)(E)										

~~For Official Use Only~~

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)										
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) min.	Outage (GOV) min.	Root Cause	Corrective Action
(b) (7)(E)										

~~For Official Use Only~~

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)										
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) min.	Outage (GOV) min.	Root Cause	Corrective Action
(b) (7)(E)										

~~For Official Use Only~~

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)										
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) min.	Outage (GOV) min.	Root Cause	Corrective Action
(b) (7)(E)										

~~For Official Use Only~~

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)										
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) min.	Outage (GOV) min.	Root Cause	Corrective Action
(b) (7)(E)										

~~For Official Use Only~~

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)										
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) min.	Outage (GOV) min.	Root Cause	Corrective Action
(b) (7)(E)										

~~For Official Use Only~~

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)										
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) min.	Outage (GOV) min.	Root Cause	Corrective Action
(b) (7)(E)										

~~For Official Use Only~~

Table D-3: ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log- (b) (7)(E)

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log-										
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) minutes	Outage (GOV) minutes	Root Cause	Corrective Action
(b) (7)(E)										

~~For Official Use Only~~

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log-									(b) (7)(E)	
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) minutes	Outage (GOV) minutes	Root Cause	Corrective Action
(b) (7)(E)										

~~For Official Use Only~~

ICSP CMLS Services Monthly Activity Report Maintenance Ticket Log-										(b) (7)(E)
Ticket ID	Opened Date	Summary	Occurrence Date	Occurrence Time	Restore Date	Restore Time	Outage (RVSS) minutes	Outage (GOV) minutes	Root Cause	Corrective Action
(b) (7)(E)										

~~For Official Use Only~~

Appendix E OPERATIONAL REQUIREMENTS MATRIX

Table E-1 provides a summary trace of operational requirements to Validated (SAT) or Failed (UNSAT) measures of effectiveness and suitability, LUT results, threshold success criterion and to the corresponding COI and mission task.

Table E-1: Operational Requirements Traceability Matrix

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7) (E)							

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7) (E)							

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7)(E)							

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task

(b) (7) (E)

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7) (E)							

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7) (E)							

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7) (E)							

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7)(E)							

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7) (E)							

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7)(E)							

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7)(E)							

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7)(E)							

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7) (E)							

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7) (E)							

~~For Official Use Only~~

Requirement ID and Source	Operational Requirement	M#	Measure	LUT Result	Threshold Success Criterion	COI	Task
(b) (7) (E)							

~~For Official Use Only~~

Table E-2 provides a summary trace of operational requirements to Validated (SAT) or Failed (UNSAT) capabilities observed in (b) (7)(E) LUT.

Table E-2: Operational Requirements Summary

Requirement ID	Operational Requirement	LUT Result	Note	ORD Priority
(b) (7)(E)				

~~For Official Use Only~~

Requirement ID	Operational Requirement	LUT Result	Note	ORD Priority
(b) (7)(E)				

~~For Official Use Only~~

Requirement ID	Operational Requirement	LUT Result	Note	ORD Priority
(b) (7)(E)				

~~For Official Use Only~~

Requirement ID	Operational Requirement	LUT Result	Note	ORD Priority
(b) (7)(E)				

~~For Official Use Only~~

Requirement ID	Operational Requirement	LUT Result	Note	ORD Priority
(b) (7)(E)				

~~For Official Use Only~~

Requirement ID	Operational Requirement	LUT Result	Note	ORD Priority
(b) (7)(E)				

~~For Official Use Only~~

Appendix F **USER SURVEY RESPONSES**

Introduction

The purpose of this survey was to capture the opinions, feelings, and impressions from the RVSSU Operators regarding their individual assessment of the system's capability to aid them in the performance of their tasks to accomplish the RVSSU mission of Protecting America's borders. Operators rated the utility (value) and usability (ease of use) of the system, and provided write in comments, adding context to their survey responses. The survey employed a 5 response Likert Scale with the ability to opt out via the 'NA' response. The utility and usability ratings employed a 1 to 10 scale with ability to opt out as well.

Survey Administration and Analysis

The survey was administered as a paper-based version of the survey, in the (b) (7)(E) CBP RVSSU C2F, during the period of the LUT, to currently active operators who were either a participant as part of the LUT test team, or operators working in the C2F on a Live Ops workstation. Operators completed the survey at their discretion during the LUT. To ensure a sense of non-reprisal and encourage open and honest answers, respondent names were not recorded or linked to the survey. Once completed, the filled-in surveys were placed on the test team's work tables in the C2F for processing.

The 5 response Likert scale had a central value of 3. Any question whose Mean value is greater than a 3.0 is considered a positive response. For the utility and usability rating responses, any question whose Mean value is greater than or equal to a 7.0 is considered a positive response.

Survey Analysis Summary

Favorable responses were indicated for the following topics:

(b) (7)(E)

~~For Official Use Only~~

Mixed responses were indicated for the following topics:

(b) (7)(E)

Unfavorable responses were indicated for the following topics:

(b) (7)(E)

System Utility (value) was rated unfavorably (<7) for (b) (7)(E)

System Usability (ease of use) was rated unfavorably (<7) for:

(b) (7)(E)

User comments included:

(b) (7)(E)

~~For Official Use Only~~

(b) (7)(E)

Survey Responses

Survey questions, participant responses and reporting of mean, median and mode follow for each question. The description for the analysis of each reporting area is listed below:

- Mean – is the average of all the responses excluding N/A group
- Median – is the middle value of those all responses Likert group
- Mode - is the most frequent of response Likert group

PART 1

System Effectiveness

1. Regarding the capability to (b) (7)(E)

Question 1 – Participants' Answers	Strongly Agree				Strongly Disagree	N/A
(b) (7)(E)						

Question 1 – Analysis of Answers	5 = Strongly Agree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	4					
	3 = mid					
	2					
	1 = Strongly Disagree					

(b) (7) (E)

~~For Official Use Only~~

2. Regarding (b) (7)(E)

(b) (7)(E)

Question 2 – Participants’ Answers

Strongly Agree				Strongly Disagree	NA
----------------	--	--	--	-------------------	----

(b) (7)(E)

Question 2 – Analysis of Answers	5 = Strongly Agree 4 3 = mid 2 1 = Strongly Disagree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	(b) (7) (E)					

3. Regarding the system's capability to (b) (7)(E)

Question 3 – Participants' Answers	Strongly Agree				Strongly Disagree	NA
(b) (7)(E)						

Question 3 – Analysis of Answers	5 = Strongly Agree 4 3 = mid 2 1 = Strongly Disagree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	(b) (7) (E)					

~~For Official Use Only~~

4. Regarding the system's capability to (b) (7)(E)

Question 4 – Participants' Answers	Strongly Agree				Strongly Disagree	NA
(b) (7)(E)						

Question 4 – Analysis of Answers

5 = Strongly Agree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
4					
3 = mid					
2					
1 = Strongly Disagree					

(b) (7) (E)

~~For Official Use Only~~

5. Regarding the capabilities of the system's (b) (7)(E) :

Question 5 – Participants' Answers

Strongly Agree				Strongly Disagree	NA
----------------	--	--	--	-------------------	----

(b) (7)(E)

Question 5 – Analysis of Answers	5 = Strongly Agree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	4					
	3 = mid					
	2					
	1 = Strongly Disagree					
(b) (7) (E)						

~~For Official Use Only~~

6. Regarding the system's capabilities of (b) (7)(E) :

Question 6 – Participants' Answers

Strongly Agree				Strongly Disagree	NA
----------------	--	--	--	-------------------	----

(b) (7)(E)

~~For Official Use Only~~

Question 6 – Participants' Answers

Strongly Agree				Strongly Disagree	NA
----------------	--	--	--	-------------------	----

(b) (7) (E)

~~For Official Use Only~~

Question 6 – Participants’ Answers

Strongly Agree				Strongly Disagree	NA
----------------	--	--	--	-------------------	----

(b) (7) (E)

~~For Official Use Only~~

Question 6 – Analysis of Answers

5 = Strongly Agree
4
3 = mid
2
1 = Strongly Disagree

Valid
Answers

Valid
Answers
and not
N/A

Mean of
Valid
Answers
and not
N/A

Median of
Valid
Answers
and not
N/A

Mode of
Valid
Answers
and not
N/A

(b) (7) (E)

~~For Official Use Only~~

Question 6 – Analysis of Answers

5 = Strongly Agree					
4					
3 = mid					
2					
1 = Strongly Disagree					
	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A

(b) (7) (E)

~~For Official Use Only~~

Question 6 – Analysis of Answers

5 = Strongly Agree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
4					
3 = mid					
2					
1 = Strongly Disagree					

(b) (7) (E)

~~For Official Use Only~~

7. Regarding the system's capability to (b) (7)(E) :

Question 7 – Participants' Answers

Strongly Agree				Strongly Disagree	NA
----------------	--	--	--	-------------------	----

(b) (7)(E)

Question 7 – Analysis of Answers	5 = Strongly Agree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	4					
	3 = mid					
	2					
	1 = Strongly Disagree					

(b) (7) (E)

~~For Official Use Only~~

8. Regarding the capabilities of the (b) (7)(E) :

Question 8 – Participants’ Answers

Strongly Agree				Strongly Disagree	NA
----------------	--	--	--	-------------------	----

(b) (7)(E)

Question 8 – Participants’ Answers

Strongly Agree				Strongly Disagree	NA
----------------	--	--	--	-------------------	----

(b) (7) (E)

~~For Official Use Only~~

Question 8 – Analysis of Answers	5 = Strongly Agree 4 3 = mid 2 1 = Strongly Disagree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
<div>(b) (7) (E)</div>						

Question 8 – Analysis of Answers	5 = Strongly Agree 4 3 = mid 2 1 = Strongly Disagree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	(b) (7)(E)					

~~For Official Use Only~~

9. Regarding the capabilities of (b) (7)(E):

Question 9 – Participants’ Answers

Strongly Agree				Strongly Disagree	NA
----------------	--	--	--	-------------------	----

(b) (7)(E)

Question 9 – Analysis of Answers	5 = Strongly Agree 4 3 = mid 2 1 = Strongly Disagree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
<div data-bbox="310 394 1816 760">(b) (7) (E)</div>						

10. Regarding the capability to (b) (7)(E)

Question 10 – Participants’ Answers	Strongly Agree				Strongly Disagree	NA
(b) (7)(E)						

Question 10 – Analysis of Answers	5 = Strongly Agree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	4					
	3 = mid					
	2					
	1 = Strongly Disagree					
(b) (7) (E)						

~~For Official Use Only~~

11. Regarding the capability (b) (7)(E) :

Question 11 – Participants’ Answers

Strongly Agree				Strongly Disagree	NA
----------------	--	--	--	-------------------	----

(b) (7)(E)

Question 11 – Analysis of Answers	5 = Strongly Agree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	4					
	3 = mid					
	2					
	1 = Strongly Disagree					
(b) (7) (E)						

~~For Official Use Only~~

12. Regarding the (b) (7)(E) :

Question 12 – Participants’ Answers	Strongly Agree				Strongly Disagree	N/A
-------------------------------------	----------------	--	--	--	-------------------	-----

(b) (7)(E)

~~For Official Use Only~~

Question 12 – Participants’ Answers

Strongly Agree				Strongly Disagree	N/A
----------------	--	--	--	-------------------	-----

(b) (7) (E)					
-------------	--	--	--	--	--

~~For Official Use Only~~

Question 12 – Analysis of Answers	5 = Strongly Agree 4 3 = mid 2 1 = Strongly Disagree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	(b) (7) (E)					

Question 12 – Analysis of Answers	5 = Strongly Agree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	4					
	3 = mid					
	2					
	1 = Strongly Disagree					
(b) (7)(E)						

PART 2**Resolving IoI Interdictions and Law Enforcement Actions**

For those agents involved in the resolution of law enforcement actions, the system is supposed to aid in the successful documentation and prosecution of illegal activities. This section posed the question: How do the system's capabilities assist task accomplishment as it pertains to resolving IoI interdictions?

13. Regarding the capability to (b) (7)(E)

Question 13 – Participants' Answers	Strongly Agree				Strongly Disagree	N/A
-------------------------------------	----------------	--	--	--	-------------------	-----

(b) (7)(E)

~~For Official Use Only~~

Question 13 – Analysis of Answers	5 = Strongly Agree 4 3 = mid 2 1 = Strongly Disagree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	(b) (7) (E)					

14. Regarding the capability for the operator to (b) (7)(E).

Question 14 – Participants’ Answers	Strongly Agree				Strongly Disagree	N/A
(b) (7)(E)						

Question 14 – Analysis of Answers	5 = Strongly Agree 4 3 = mid 2 1 = Strongly Disagree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
(b) (7)(E)						

~~For Official Use Only~~

For Questions 15 and 16:

(b) (7)(E)

[REDACTED]

15. Regarding the capability for the operator

(b) (7)(E)

Question 15 – Participants’ Answers

Strongly Agree				Strongly Disagree	N/A
----------------	--	--	--	-------------------	-----

(b) (7)(E)

Question 15 – Analysis of Answers	5 = Strongly Agree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	4					
	3 = mid					
	2					
	1 = Strongly Disagree					
(b) (7)(E)						

16. Regarding the capability to (b) (7)(E).

Question 16 – Participants’ Answers	Strongly Agree				Strongly Disagree	N/A
(b) (7)(E)						

Question 16 – Analysis of Answers	5 = Strongly Agree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	4					
	3 = mid					
	2					
	1 = Strongly Disagree					
(b) (7) (E)						

~~For Official Use Only~~

System Health Monitoring and Training

All operators received some form of training, either formal or on-the-job training, and will have experienced various system equipment anomalies or failures.

17. Regarding the capability to (b) (7)(E).

Question 17 – Participants' Answers	Strongly Agree				Strongly Disagree	NA
(b) (7)(E)						

Question 17 – Analysis of Answers	5 = Strongly Agree 4 3 = mid 2 1 = Strongly Disagree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
(b) (7)(E)						

~~For Official Use Only~~

18. Regarding the layout of the workstations.**Question 18 – Participants’ Answers**

Strongly Agree				Strongly Disagree	NA
----------------	--	--	--	-------------------	----

**Question 18 – Analysis of Answers**

5 = Strongly Agree 4 3 = mid 2 1 = Strongly Disagree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
--	---------------	---------------------------	-----------------------------------	-------------------------------------	-----------------------------------

~~For Official Use Only~~

19. Regarding required skill sets for RVSSU operators.

Question 19 – Participants’ Answers

Strongly Agree				Strongly Disagree	NA
----------------	--	--	--	-------------------	----

(b) (7) (E)

~~For Official Use Only~~

Question 19 – Analysis of Answers	5 = Strongly Agree 4 3 = mid 2 1 = Strongly Disagree	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	(b) (7) (E)					

~~For Official Use Only~~

PART 3**Utility and Usability**

The utility of a system is related to how much value the delivered capability adds to the operator's ability to perform their mission. The usability of the system is related to how hard, or easy, it is to get the system to perform the necessary functions required to perform their mission.

20. Regarding system utility (value) toward completing the mission of Protecting America's border.

Question 20 – Participants' Answers

1- Low, Little	2	3	4	5	6	7	8	9	10 – High, A lot	N/A
----------------------	---	---	---	---	---	---	---	---	------------------------	-----

(b) (7) (E)

~~For Official Use Only~~

Question 20 – Participants’ Answers

1- Low, Little	2	3	4	5	6	7	8	9	10 – High, A lot	N/A
----------------------	---	---	---	---	---	---	---	---	------------------------	-----

(b) (7) (E)

~~For Official Use Only~~

Question 20 – Analysis of Answers	10 = High, A lot	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	5 = mid					
	1 = Low, Little					
(b) (7) (E)						

Question 20 – Analysis of Answers	10 = High, A lot	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	5 = mid					
	1 = Low, Little					
(b) (7)(E)						

21. Regarding system usability (ease of use).

Question 21 – Participants' Answers

1 – Low, Hard	2	3	4	5	6	7	8	9	10 – High, Easy	N/A
---------------------	---	---	---	---	---	---	---	---	-----------------------	-----

(b) (7) (E)

~~For Official Use Only~~

Question 21 – Participants’ Answers

1 – Low, Hard	2	3	4	5	6	7	8	9	10 – High, Easy	N/A
---------------------	---	---	---	---	---	---	---	---	-----------------------	-----

(b) (7)(E)

~~For Official Use Only~~

Question 21 – Analysis of Answers	10 = High, Easy	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	5 = mid					
	1 = Low, Hard					
(b) (7) (E)						

~~For Official Use Only~~

Question 21 – Analysis of Answers	10 = High, Easy	Valid Answers	Valid Answers and not N/A	Mean of Valid Answers and not N/A	Median of Valid Answers and not N/A	Mode of Valid Answers and not N/A
	5 = mid					
	1 = Low, Hard					
(b) (7)(E)						

~~For Official Use Only~~

Appendix G RESOURCES

RESOURCE**PROVIDED****Test Articles****(b) (7)(E)** RVSSU

August 3 - 14, 2015

Test Sites**(b) (7)(E)** Border Patrol Station

12 days

Test Support Equipment**(b) (7)(E)****Test Targets and Expendables****(b) (7)(E)****CBP Personnel Test Support**

CBP Field Agent Walkers

CBP RVSSU Supervisors

CBP RVSSU Field Test Coordinator / Safety

(b) (7)(E)**Simulations, Models, and Test Beds**

None

Special Requirements**(b) (7)(E)****Manpower/Personnel Training**

CBP RVSSU Operators

(b) (7)(E)

Appendix H **DISTRIBUTION OF REPORT**

Copy to:

RVSSU Program Manager

OTIA

OBP

USBP

ORMD

(b) (7)(E)

~~For Official Use Only~~

Appendix I ACRONYMS

Acronym	Definition
5TT	Five New Tower Test
A _o	Operational Availability
AoC	Area of Coverage
AoI	Area of Interest
AoR	Area of Responsibility
BPA	Border Patrol Agent
C2	Command and Control
C2F	Command and Control Facility
C4I	Command, Control, Communication, Coordination And Intelligence
CBP	Customs And Border Protection
CDRL	Contract Data Requirements List
CMLS	Contract Maintenance Logistic Support
COIs	Critical Operational Issues
CORE	Common Operating and Response Environment
DAQ	Data Acquisition
DCS	Data Collection System
DID	Data Item Description
DMS	Data Management System
DOTS	Defect Observation Tracking System
DT&E	Development Test and Evaluation
EO	Electro-optical
FMV	Full Motion Video
FOR	Field of Regard
FOV	Field Of View
FSD	Functional Specification Document
GDOS	General Dynamics One Source
GFE	Government Furnished Equipment
IAA	Inter-Agency Agreement
ICSP	Integrated Contractor Support Plan
ID	Identification
IEF	Integrated Evaluation Framework
IFOV	Instantaneous Field of View
IoI	Item of Interest
(b) (7)(E)	
ITO	Independent Test Organization
KPP	Key Performance Parameter
(b) (7)(E)	
LOO	Letters Of Observation

~~For Official Use Only~~

Acronym	Definition
(b) (7)(E)	
LSE	Lead System Engineer
LUT	Limited User Test
MAR	Maintenance Action Report
MBTD	Mission-based Test Design
MCT	Mission Capable Time
MDT	Mean Down Time
MLDT	Mean Logistics Delay Time
MNS	Mission Needs Statement
(b) (7)(E)	
MTBCF	Mean Time Between Critical Failures
MTBF	Mean Time Between Failure
MTTR	Mean Time To Repair
NALCOMIS	Naval Aviation Logistics Command Management Information System
(b) (7)(E)	
NOC	Network Operations Center
O	Objective
OBP	Of Border Patrol
OE	Operational Effectiveness
OEB	Operational Evaluation Branch
OTF	On-the-Job
OPCON	Of The System. B.4.1.5
ORD	Operational Requirements Document
OS	Operational Suitability
OSHA	Occupational Safety And Health Administration
OT	Operational Test
OTIA	Office of Technology Innovation and Acquisition
PD	Probability of Detection
PID	Probability of Identification
PM	Preventive Maintenance
PMO	Program Management Office
(b) (7)(E)	
PWS	Performance Work Statement
QLB	Quick Look Brief
QLR	Quick Look Report
RAM	Reliability, Availability and Maintainability
RFR	Runs For Record
RVSS	Remote Video Surveillance System
RVSSU	Remote Video Surveillance System - Upgrade

Acronym	Definition
SAED	System Analysis and Evaluation Division
SAR	Shift Activity Report
SAT	System Acceptance Test / Satisfactory
SBI	Secure Border Initiative
SCD	Secondary Collective Display
SE	Systems Engineering
SED	Systems Engineering Directorate
SME	Subject Matter Expert
SOC	Security Operations Center
SoS	System Of Systems
(b) (7)(E)	
SUT	System Under Test
T	Threshold
TD	Test Director
TEGR	Test Event Gate Review
TEMP	Test and Evaluation Master Plan
TIMS	Training Integration Management System
TIR	Test Incident Report
TL	Test Lead
TO	Test Objectives
TOR	Test Observation Report
TRB	Test Review Board
TRR	Test Readiness Review
TSR	Technical Service Requests
TT	Test Team
UNSAT	Unsatisfactory
USBP	United States Border Patrol
(b) (7)(E)	
VMS	Video Management System
(b) (7)(E)	

Appendix J **REFERENCES**

Reference No.	Document No.	Document Description	Date
1.	(b) (7)(E)		December 23, 2011
2.			May 8, 2012
3.			June 23, 2015
4.			June 23, 2015
5.			July, 2013
6.			May 1, 2015
7.			January 29, 2014
8.			September 19, 2014
9.			January 20, 2014
10.			September 15, 2015
11.			Beta
12.			February 26, 2015

Appendix K DETAILED EXECUTION SCHEDULE

Date	Hours	Event #	Event	Event Description
8/3/2015	(b) (7)(E)			
8/4/2015				
8/5/2015				
8/6/2015				
8/7/2015				
8/8/2015				
8/9/2015				
8/10/2015				
8/11/2015				
8/12/2015				
8/13/2015				

For Official Use Only

Date	Hours	Event	Event	Event Description
	(b) (7)(E)			
8/14/2015				
LEGEND:	DR - Dry Run	CAWG - COI Analysis Working Group		
	IT- Integrated Test			